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Hygiene of Housing

The Responsibilities of Public Health in Housing *

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BEFORE we attempt to consider the responsibilities of public health in housing, it seems important to clarify our responsibilities in the entire field of environmental sanitation. Unless we can arrive at general agreement on where we are going in this broad field, we obviously cannot agree on what functions we should be performing and how to perform them best.

The average citizen desires to attain a state of mental well-being. He recognizes that it is difficult to attain this state if he suffers from physical disease, but he is equally aware that the absence of disease does not automatically render him comfortable and happy. A great many public health administrators have been so engrossed in attempting to improve the physical well-being of people that they have permitted many social factors, which basically influence emotional health, to remain tangential to their sphere of operation.

During the past several years I have discussed the role of public health agencies in the improvement of the hygiene of housing with a fairly large number of health officers and public health engineers. Without exception they admitted that a significant proportion of the population now lives in grossly unsatisfactory dwellings. They all appeared to be in sympathy with the idea that such dwellings ought to be eliminated. All of them seemed to sense that the abolition of slums would be beneficial from a public health viewpoint. Surprisingly, however, a majority of them have not endeavored to inaugurate a truly comprehensive housing hygiene program as a part of their own public health program.

THE VOICE OF THE PEOPLE

Most health officers and public health engineers are accustomed to taking action aimed at minimizing the probability that people will be affected by disease or injury. They are also prone to examine housing situations to see whether there are associated factors which, if permitted to exist, involve a significant probability that the physical health of the occupants will be impaired. This traditional approach has caused many health officers and engineers to skate

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along the rim of the housing hygiene problem. They have concerned themselves with such matters as the elimination of rodent infestations, the provision of a potable water supply on the dwelling premises, and the construction of suitable facilities for the disposal of sewage. Because of their preoccupation with such isolated activities, many health officers and engineers are insistent that the agencies with which they are associated are already playing a truly comprehensive role in the improvement of housing.

The people, however, do not look on a dwelling unit as something with apertures through which rodents must be kept from entering, or something to which water must be conveyed, or a place which serves as a depository for sewage which must be disposed of in a sanitary manner. The people think of a dwelling unit as a home in which human beings rear their families and hope to live in a safe, healthful, and contented fashion.

If we could demonstrate that the absence of each one of the specific items comprising a good home resulted in an increase in some particular morbidity or mortality rate, practically all official health agencies would immediately launch a frontal attack on every facet of sub-standard housing. Unfortunately, technics have not been devised which enable us to divorce the physical structure from numerous other factors such as the occupants' education, income, intelligence, and heredity. The people are uninterested in whether such technics have or have not been devised. They instinctively know that substandard housing is socially intolerable. The people have created public health agencies and they expect to be served as they desire to be served. Their concept of what should be included in an adequate public health program will not always be reflected in activities that significantly lower morbidity or mortality rates.

NEW APPROACH TO ENVIRONMENTAL SANITATION NEEDED

Many health officers and public health engineers are prone to sustain major frontal attacks on various facets of environmental sanitation that were problems of major importance several decades ago, but have since been so well controlled that only minor maintenance operations can be justified today. In most urban centers the average citizen takes it for granted that milk and various other food supplies are being adequately protected. For example, he is not interested in expending additional money for the purpose of attaining further refinements in the quality of the milk supply. He is satisfied when he recognizes that the milk dispensed in his community is causing no demonstrable milk-borne disease and when it possesses a good flavor, is free from objectionable odor, and can be preserved for several days without souring. The people will not always support those among us who strive for needless perfectionism in a few fields of environmental sanitation. This is particularly true if we neglect other branches which the people instinctively recognize as being of great social importance.

Health officers have always claimed community sanitation as one of their major spheres of activity. When the public health engineer was born he began to stake out a claim within the official health agency and labelled it environmental sanitation. For many years prior to the birth of the sanitary engineer, health departments were engaged in improving the physical environment in such places as factories, semi-public buildings, places of amusement, as well as schools and other public buildings. Although engineers have done much to refine the technics and to strengthen programs relating to these traditional activities, relatively few have been instrumental in inaugurating a true renaissance in environmental sanitation.

A working man spends from one-third to two-thirds of his time at home and less than one-third at his place of employment. A housewife and a preschool child spend from two-thirds to nineteen-twentieths of their time at home. A school child spends one-half to three-quarters of his time at home and less than one-fifth of his time at school. Why, since the home is the most important thing in man's structural environment, have so few American health departments become fundamentally interested in the hygiene of housing? The answer probably lies in the fact that too many of us have continued to approach environmental sanitation with the old, austere variety of scientific skepticism instead of from a broader sociological viewpoint.

The public health movement has already altered its equilibrium. It no longer rests securely on a base of physical sciences. Today, one foot also rests on a pedestal of social sciences. This shift in balance is already firmly and irreversibly established. As the general health movement goes, so will environmental sanitation go. If, therefore, we can agree that environmental sanitation is moving onto the endless plane of social welfare, we can agree that public health must assume broader responsibilities in the housing hygiene field.

I believe the responsibilities of public health in housing encompass the following broad functions: (1) city planning, (2) zoning, (3) enactment of proper building codes, (4) measurement of the quality of existing housing, (5) enactment and enforcement of adequate housing codes, and (6) housing education.

The hygiene of housing is a broad and comprehensive field. An official health agency cannot do the job alone. The health department's responsibilities make it mandatory that the health officer and public health engineer learn to work in close coöperation with officials engaged in city planning and zoning, building inspection, fire prevention, public housing, and urban redevelopment.

PLANNING

Many of our current environmental sanitation problems are traceable directly to poor city planning, or the absence of any such planning which prevailed a generation or two ago. The lack of open spaces and inter-mixture of industrial and dwelling structures in the same neighborhood, or even in the same city block, exemplify the planning mistakes of the past. Very few American health officers have ever shown any significant interest in city planning. Public health administrators should recognize that the type of city planning required today is radically different from that currently in vogue in the majority of American cities.

Health officers are now showing great concern for the effective protection of the civilian population in the event of an atomic disaster. In most states and cities where civil defense programs have been inaugurated, the health officer has been designated as the official responsible for the organization and operation of the health services (including special weapons) defense. The National Security Resources Board [1] recommends that " In each State, the State health officer should be placed in charge of all State civil defense health and medical services; and cities should appoint local health officers in the same manner." Health officers are aware of the enormous amount of man power and materials required to provide medical care for even a modest number of seriously wounded persons.

Although he has been tagged with the tremendous responsibility for providing medical and ancillary services needed to render care to casualties, the health officer should also continue to think along traditional preventive channels. The treatment of medical casualties is palliative. Although important, therapy is

preventive only in the sense that we may prevent some fatalities or disabilities. The distance between the individual and the point at which an atomic explosion occurs is, and will continue to be, the best protection which can be afforded.

Much of the loss of life and destruction of property experienced in various European cities during World War II were directly attributable to poor city planning. Recently a great deal has been said about breaking up large cities and relocating their industries in smaller towns, with the expectation that people will follow the industries. Theoretically this is desirable and a strong supporting case might even be propounded from a long-range economic viewpoint. Various political considerations are, however, almost certain to nullify translation of any such scheme into large-scale concrete action.

As a matter of fact, our larger cities are increasing in size from day to day and they seem destined to continue their growth, at least until such a time as atomic bombs may actually fall upon them. Unfortunately they are continuing to grow in a ball-shaped manner. It seems apparent that in the future, cities must be developed in such a fashion that narrow ribbon-like developments are separated by parks, playgrounds, and other recreation areas, or even by farm lands. More than five years have elapsed since Hiroshima was devastated by an atomic explosion. During this interval millions of homes have been built in the urban areas of the United States. No major city has as yet taken any effective step to alter its present circular developmental pattern. The Mayor of Milwaukee [2] has recently proclaimed it to be vital for cities to adopt a plan of ribbon-shaped development as quickly as possible. A few cities in northern Europe, such as Copenhagen, Denmark,[3] have planned reasonably narrow, finger-like projections radiating from the old city core.

In Hiroshima [4] one atomic bomb completely destroyed or burned 61,820 houses and partially destroyed or burned 16,350 others. The catastrophic effect of such massive destruction on the hygiene of housing is self-evident.

While city planning is not primarily the responsibility of health officers or public health engineers, it is none the less true that the planning mistakes of the past are significantly reflected in the day by day tasks that health agencies are called upon to perform today. Planning mistakes being made today may even more vitally affect our activities in the future. The health officer should be one of the first public officials to demand and support good city planning. It will take many years to decentralize cities by rearranging them in a ribbon-like pattern. It was never so important that the health officer raise his voice as it is now.

ZONING

Some of our current urban environmental sanitation problems are an outgrowth of poor zoning. The tenement and rooming house problems we are called upon to cope with today arose largely as a result of the inadequacy of zoning legislation enacted in the past. It is futile to attempt to fix responsibility for the mistakes of the past. We should bear in mind, however, that very few health officers have ever demonstrated any real interest in the enactment of zoning laws in their own communities.

The heavy bombing experienced by various cities in the last war focused attention on numerous serious defects attributable to improper zoning. We are now living in an age when the possibility of atomic attack upon cities cannot be lightly dismissed. However significant good zoning may have been in the past, it will be even more important in the future.

Vast multistory apartment houses and office buildings are being erected in our

cities today. Health departments are in some places unwittingly playing a role in the abetment of this practice. Those public health agencies which are conducting extensive housing hygiene programs are serving to accelerate the demolition of slum areas. In some communities portions of such areas are being redeveloped by housing authorities or under the auspices of redevelopment authorities, with private enterprise playing a significant role. Almost invariably, the number of people per acre is greater after the worn out houses have been replaced. Other factors remaining equal, the number of casualties following an atomic disaster will be directly proportional to the number of people per acre within the area affected by the explosion.

At a time when dispersal of urban populations is indicated, we should do everything possible to discourage the erection of large multistory dwelling structures and office buildings. This can only be done by the prompt enactment of truly modern zoning laws. To suggest that zoning laws be radically changed is itself equivalent to the detonation of an atomic bomb—a political one. Changes in zoning in various sections of our cities would drastically affect present land values. Nevertheless, the most fundamental responsibility of official health agencies is to protect the health and lives of people by being concerned with those activities which the people cannot adequately cope with on an individual basis. The people have a right to expect guidance from public health agencies in all matters which may affect the public health. I believe health officers and public health engineers have a moral obligation to raise their voices in a demand for new and more realistic zoning laws.

BUILDING CODES

The current growth of American cities is taking place under the influence of building codes which have not been modified in the light of lessons learned from the war damaged cities of Europe or Asia. We have not seen fit to prevent the excessive use of ordinary wall-bearing construction or to limit drastically the use of combustible material in the construction of buildings.

We have not thought it important to design the basements of dwelling structures so they might better serve as reasonably effective bomb shelters. We have not even deemed it necessary to require that the basement of a newly constructed dwelling have two separate means of egress. In Stockholm, Sweden, the erection of wood houses has been entirely prohibited, and the building code requires construction to be as nearly fireproof as is compatible with practical economic considerations. In that city every multifamily dwelling structure containing eight or more living units must include a windowless basement bomb shelter sufficiently strong to withstand the collapse of the superstructure upon it. The shelter must be equipped with appropriate ventilation and gas filtering devices, fire doors, and escape routes.

Portions of building codes have always been of public health significance. The code of today determines the types of dwellings people will live in tomorrow. Whether or not vast numbers of American people may some day be killed or injured by flying debris, or as a result of conflagration or fire storm, will be determined, at least in part, by the content of our local building codes. The implications for health officers and public health engineers are self-evident.

MEASUREMENT OF THE QUALITY OF EXISTING HOUSING

In the field of housing, sound public policy cannot be based on anything except a wide variety of qualitative measurements which disclose typical conditions, not only in the slums, but as far up the ladder as local conditions make it profitable to measure.

We have an instrument which enables us to gather and interpret the basic data essential to the establishment of any comprehensive urban program designed to eliminate substandard housing. It is the A.P.H.A.'s *Appraisal Method for Measuring the Quality of Housing*.[5] Its basic value as a system for measuring housing quality is due to the fact that it enables us to point out, with a practical degree of sharpness, the individual substandard and slum dwellings, the boundaries of slum and lesser problem areas, the types of existing deficiencies, and the character of the environment. Without this knowledge it is impossible to plan intelligently or efficiently or carry out economically, a program encompassing such ramifications as the following: (1) protection of the better sections of a community against excessively rapid deterioration, (2) rehabilitation of the less severely blighted areas, (3) demolition of the grossly substandard and rock bottom slum sections, (4) determination of the most desirable use to which land can be put in those areas in which demolition of existing structures is indicated.

There are two essential components to the appraisal of the quality of housing. One is the measurement of the quality of the dwelling structure and its contained dwelling unit or units. The other is the qualitative measurement of the environment. In my opinion, the agency best fitted to gather and make practical use of environmental data is the local planning agency. The dwelling appraisal can be most effectively and economically performed by that municipal agency which is now responsible, or is to become responsible, for the enforcement of the local housing code.

The appraisal of housing is important out of all proportion to the space devoted to the subject in this paper. I do it injustice principally because it is the subject of another paper to be presented at this joint session.*

ENACTMENT AND ENFORCEMENT OF ADEQUATE HOUSING CODES

Although most cities have a building code, a sanitary code, and a zoning code, in many there is no appropriate legal authority which permits any administrative department to cope adequately with the wide variety of items associated with the hygiene of existing housing. Building codes deal principally with materials and equipment entering into construction, primarily from a structural safety, and only secondarily from a health viewpoint. Their provisions are not retroactive and generally provide for closure of dwelling units to human occupancy only when the buildings are in danger of structural collapse.

A housing code is intended to eliminate socially undesirable and unacceptable living situations. It deals with dwellings from the occupant's viewpoint and specifies minimum standards compatible with health, safety, and livability. It deals with such things as light, ventilation, sanitary facilities, room sizes, protection against fire, freedom from vermin, general cleanliness, and prevention of over-crowding. It specifies basic minimum requirements, applicable to all dwellings irrespective of date of construction, size of structure, or nature of occupancy.

Of all the local agencies engaged in the enforcement of legal codes the official health agency is, in my opinion, the one best adapted to enforce a housing code. There are many reasons for this belief. Perhaps the most cogent of all is the fact that most courts have interpreted health codes very liberally. Numerous decisions have held that it is not necessary to prove that undesirable conditions are the direct cause of disease, but only that they interfere with the reasonable comfort and enjoyment of the people. If the health department

* Senn, Charles L. Contributions of the A.P.H.A. to Housing Evaluation. *A.J.P.H.* 41, 5:511–515 (May), 1951.

is the agency best fitted to enforce the housing code, it is also the agency which can most effectively and economically engage in the appraisal of the quality of dwellings.

The very important subject of the housing code and its enforcement has been dealt with only very briefly in this paper because it is also the subject of another paper to be presented at this joint session.*

HOUSING EDUCATION

Official health agencies have for many years endeavored to convey a better understanding of individual and community health problems to the people. We have found the educational approach to be very valuable in helping us attain a number of our environmental sanitation goals. In the realm of food sanitation we have directed our educational bombardment at the producer, processor, distributor, and consumer of a variety of foods.

Very few health departments have aimed their educational endeavors into channels which might be expected to result in significant improvement of housing hygiene. In those communities where the official health agency has earnestly attacked the housing problem, the approach has been based principally on police power.

It is typical of American housing that the consumer has possessed an inadequate fund of knowledge on which to formulate a realistic concept of his true housing needs. Some individuals live in substandard dwellings, even though their economic status would allow them to live in better houses. A large percentage of people buying new homes today are sacrificing living space in order to obtain numerous items of convenience. Even though such items may be desirable, they are not so important as the provision of space essential to comfortable living.

An intelligently planned and executed housing education campaign is, I believe, as vital a tool in the improvement of local housing conditions as is the appraisal of housing quality. In fact, the data obtained as a result of measuring housing quality are essentially valueless unless used to make the people more cognizant of the community's housing assets and liabilities. Official health agencies do not produce, process, distribute, or sell foods. They have, nevertheless, been mainly responsible for a revolutionary change in the attitude of the people toward nutrition. It is education which has caused this change to materialize during the past two decades. This encourages me to believe that the same agencies, which do not produce building materials and do not build, sell, rent, or finance houses, could be similarly successful in changing the attitude of the people toward housing.

No local official agency is as well prepared to promote housing hygiene education as the health department. It not only holds the keys to school, press, and radio channels, but also employs inspectors and nurses who can teach people in the home, the most natural learning environment in which housing education can be nurtured.

CONCLUSION

Public health agencies have basic responsibilities which cannot be met without aggressively attacking the housing hygiene problem. Housing is a broad and complex branch of environmental sanitation which richly deserves our attention. Interwoven in its fabric are a greater variety of items of health, legal, economic, and social significance, than are encompassed in any other sphere of environmental sanitation. Even though our efforts in the housing field may not result in significant reductions in morbidity or mortality rates, many

* Johnson, Ralph J. Housing Law Enforcement. Paper delivered at A.P.H.A. meeting.

people will be made more comfortable and happy. Those now engaged in public health work, who are concerned only with preventing illness and prolonging life, are, in effect, whether they realize it or not, merely attempting to make people more comfortable and happy. Health department participation in housing hygiene activities requires no re-orientation of the basic philosophy underlying public health work, but rather a re-orientation of our perspective.

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A.P.H.A. Undertakes New York City Survey

Reginald M. Atwater, M.D., executive secretary, American Public Health Association, announced late in March that the Association had undertaken a survey of health facilities in New York City, primarily in the City Department of Health, at the request of the Mayor's Committee on Management Survey. This review will be a part of an extensive study of city government under the direction of Professor Luther Gulick.

According to Dr. Atwater the survey will not represent the conventional type of descriptive record but rather will have as its basic objective the outlining of a sound and enlightened public health program for the next 25 years. The study will be directed by Roscoe P. Kandle, M.D., M.P.H., field director of the Association, with the close coöperation of Ira V. Hiscock, Sc.D., professor of public health, Yale University; Hugh R. Leavell, M.D., Dr.P.H., professor of public health practice, Harvard School of Public Health, and Abel Wolman, Dr. Eng., professor of sanitary engineering, Johns Hopkins University.

The field staff of the survey will be recruited primarily from the schools of public health. It is planned that a series of conferences will be held at which selected public health advisers and those from related professions will consider the health problems of the future and their solution. The survey is to be completed before November, 1951.

Hygiene of Housing

The Place of a Health Officer in a Coördinated Attack on the Municipal Housing Problem *

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IN St. Louis we are faced with fundamentally the same housing and neighborhood deterioration conditions which plague government officials in other large urban centers across the nation. The familiar pattern of a decayed central area surrounded by a wide belt of blight (which in our city includes about one-third of our homes) is all too evident to even the casual observer. As in other cities we find our highest rates of infant deaths, tuberculosis, and so forth in these areas. Here, too, we have the poorest sanitation conditions, the worst rat infestation, and large numbers of outdoor toilets. It is indeed a situation which weakens our efforts to improve the public health.

The effects of the overall housing conditions are felt in every phase of the community's life. These run-down sections of the city consume more revenue by far than they produce, they require excessive municipal services in the way of fire and police protection; they are breeding places for crime and juvenile delinquency. In short, the slums and blighted areas have a depressing effect not only on the people who must inhabit them, but also on the economic stability of the city.

In these days of financial hardship for most large municipal governments no city can afford much longer to permit these veritable rat-holes to drain off increasingly great percentages of decreasing revenue. In St. Louis the economic aspects of this problem are perhaps more keenly felt than in other large cities; the reason for this is the fact that this city is so highly urbanized—there are virtually no undeveloped tracts of land left within the city limits. This means that there is little room for new construction with the consequent increase of tax valuation, to offset the declining revenue from the slum and blighted neighborhoods. And there seems to be no reasonable hope at this time that the city will acquire additional undeveloped land within its borders. Furthermore, there is nothing static about blight; it is constantly reaching out into the more stable, more desirable neighborhoods. As a result, it is imperative, not only from the standpoint of public health but also for the future solvency of the city, that something be done to retrieve the lost living values in the deteriorated parts of St. Louis.

Naturally, this situation did not spring up overnight. There is in existence a report on housing conditions in St. Louis,[1] written some 42 years ago, which reads just like the indictment of our slums that we might write today. However, through the years no one has been able to evolve a satisfactory method

* Presented at a Joint Session of the Engineering and Health Officers Sections of the American Public Health Association at the Seventy-eighth Annual Meeting in St. Louis, Mo., November 2, 1950.

of preventing decent neighborhoods from becoming blighted and ultimately slum districts. Both the Health Division and the Division of Building Inspection have always handled the usual sporadic complaints; but no one has expected such complaint work to result in any notable improvement in housing conditions. Especially after the recent war, the much discussed housing shortage with its resultant doubling up of families, butchering of good housing units, etc., threatened to accelerate the spread of blight and to create new slums. The public now became housing conscious. We began to hear a great deal about plans for slum clearance, public housing, privately financed housing projects, urban redevelopment, and other proposals to eliminate our present slums. It is true that such reconstruction projects offer the ultimate solution to the slum problem; however, they do nothing to improve living conditions in those vast areas of blighted homes which remain uncleared, and they do not necessarily prevent the deterioration of neighborhoods which are presently in good condition. Without question, there is the need for a housing improvement program to restore the livability of our blighted neighborhoods and to stop the spread of blight.

Late in 1945, St. Louis began to devise a program that would fill this need. This program approaches the problem from two angles. First, it attacks the problem of deteriorated housing; and, second, it attempts to eliminate those environmental factors which tend to depress a residential neighborhood.

At the outset of the program we faced a serious obstacle in not having a comprehensive ordinance which defined minimum legal standards for housing units in the city. We had some ordinance authority covering a few aspects of the problem; but existing ordinances were insufficient. Hence, a study was made of the literature and of the housing ordinances passed or proposed in other municipalities; and after consultation with the Committee on the Hygiene of Housing of the American Public Health Association, a Minimum Housing Standards Ordinance was drawn up and subsequently passed by the Board of Aldermen. The ordinance sets up standards pertaining to facilities, maintenance, and occupancy of dwelling units. It incorporates those requirements which are deemed necessary, reasonable, and enforceable in St. Louis.

We now have the authority to require that housing units be brought up to a level permitting decent healthful living. However, housing deterioration is only one of the factors which cause a neighborhood to run down. In fact, in most instances there is reason to believe that poor environmental conditions are the cause, rather than the result, of unsatisfactory housing. Obviously, the livability of any house is greatly influenced by its surroundings. Any housing improvement program is almost certain to fail in the long run, unless some effort is made to remove unsatisfactory environmental conditions. To be specific, there is the problem of excessive automobile traffic through a residential area, or the question of inadequate playground facilities for children. Such conditions as these cannot be corrected by the enforcement of housing standards alone. The problem of blight is truly complex and must be approached from many angles and with various methods. Consequently, in St. Louis we are attacking the problem on a neighborhood basis. That is, taking the neighborhood as the unit of community living, we attempt to remove those factors which make the neighborhood less desirable to live in. Thus the fixing up of houses is but a part—although an important part—of the program.

Obviously a program such as this is considerably more than just a health department affair. As it is presently set

up, it is a coöperative program with three city agencies—the Health Division, the City Plan Commission, and the Division of Building Inspection—jointly responsible for carrying it out. Other city agencies and voluntary health agencies also have a place in the program. It is recognized that some authorities in the field advocate a housing improvement program carried out almost exclusively by the health department. Certainly there are valid grounds, epidemiological and otherwise, for health department interest in housing improvement. However, the type of program we have in St. Louis takes into consideration many aspects of the problem which are removed from the scope of public health. The program is ambitious and can succeed only if we utilize the abilities and experience of all agencies concerned with the problem.

This is a housing *improvement* program; that is, its purpose is to rehabilitate existing housing. It is not a program designed for slum areas. Rather, it is aimed at the problem of blight. (By "blighted" property we mean property which can, with reasonable cost, be brought up to a decent standard; we use the term "slum," on the other hand, to indicate property which is so far deteriorated or so obsolete that the cost of rehabilitation would be prohibitive.) If this type of program were applied in slum areas, it would very probably result only in the demolition of virtually every residential structure in these worst areas. The program would be doomed to fail.

The selection of areas is thus a vital phase of this program. To make an intelligent selection we must first have exact data on the condition of housing in the various neighborhoods in St. Louis—data which are now lacking. We have the statistics from the 1940 national census, which are of very limited value; we also have material prepared several years ago by our City Plan Commission showing in a general way the slum and blighted portions of the city. The results of the 1950 census may be available soon. All this material is of value mainly as a guide, however, since it does not contain needed detailed information. In order to obtain these data an appropriation from our Board of Aldermen was secured to conduct a study of housing and neighborhood conditions in the city. The housing study, using the A.P.H.A. Housing Appraisal Method, is now being conducted by the Health Division. For this purpose we are employing a field staff of 12 inspectors and 3 supervisors. Meanwhile, the neighborhood environmental portion of this appraisal method is also being carried on jointly by engineers of the Health Division and architects of the City Plan Commission.

The next step in the plan is to make the selection of areas to be rehabilitated. This selection will be made by all three coöperating agencies. Using the study data we should be able to recognize neighborhood boundaries where such exist and then proceed to apply the program in the entire newly defined neighborhood. For the sake of efficiency, a series of priorities will probably be set up indicating the order of treatment of areas; those neighborhoods able to profit most from rehabilitation will be given the highest priority. Neighborhoods will have priority where environmental blighting factors are such that they can be minimized or eliminated in a reasonable time. The presence of facilities for educational and informational work will also be a factor in assigning priority. Other factors being equal, the plan is intended to proceed from the least blighted neighborhoods to those showing more deterioration, obsolescence, or other blight. This is in line with the reasoning that this plan is not a cure for slums but a preventive or reversal of the process of housing blight.

Once a neighborhood is selected for rehabilitation, the first step will be the drawing up of a complete new plan for the neighborhood. It is through this re-planning that we hope to remove the blighting influences from the neighborhood environment. If the neighborhood appraisal indicates that traffic congestion, poor playground facilities, overcrowding of the land, or similar blighting factors are problems in the area under consideration, the new plan will attempt to solve these difficulties. The actual re-planning will be chiefly the responsibility of the City Plan Commission in order that the program will conform with our Comprehensive City Plan.

We now come to a step in the program which we feel is unique in any large American city—bringing the program down to the grass roots. After the new plan for a neighborhood is drawn up, it will be submitted to residents and owners of property within the neighborhood for comment and suggestions. Individual citizens as well as all organizations—PTA's, improvement associations, church groups, and so forth—in the neighborhood will be contacted and asked to study the new plan with a view to offering constructive criticism. A modified plan will then be drawn up incorporating, as far as practicable, the suggestions received from the neighborhood. This modified plan will then be applied.

No program of this type can be successful unless it is "sold" to the people most affected—those in the neighborhood. Every available means—community organization, publicity, and even individual contact—will be employed to get the final re-plan accepted.

Of course, the Minimum Housing Standards Ordinance will play a vital role in renovating the neighborhood. Here, too, every educational and "selling" means will be used to obtain voluntary compliance with the ordinance. Frankly, we anticipate a fair amount of such voluntary coöperation. We realize, however, that this persuasive approach can never be 100 per cent successful; some need for enforcement measures is to be expected. Such enforcement will be mainly the responsibility of the Division of Building Inspection. By experience and training, and in accordance with the present administrative organization of the city government, the Building Division is better suited for this comprehensive enforcement program than any other branch of the city government. A few items, however, such as the elimination of outdoor toilets, fall under the jurisdiction of the Health Division. Also the Health Division has a basic responsibility for the program in its relation to the abatement of nuisances. Under the ordinance, the housing deficiencies are all defined as nuisances and thus subject to a general responsibility of the Health Commissioner for correction.

From the details just outlined, it is apparent that very close coöperation on the part of all three interested agencies is essential. In each phase of the program one or another of the agencies plays a leading role. In the initial phases—the housing study, the training of field personnel—the Health Division gets the spotlight. In the planning phases, of course, the City Plan Commission operates. In the enforcement stage, the Building Division carries the main responsibility. In order to bring about the coöperation necessary, a coördinating committee has been set up, composed of the chief public health engineer, the director of the housing program, the Building Commissioner, and the Director of Planning, all of whom have the main responsibility to synchronize the various phases of the program. The key individual in the program, the Director of the Housing Section, with his staff, is employed by the Health Division during the initial phases of the program, i.e., until the entire housing and neighbor-

hood study is complete. At that time he will become an employee of the Building Division. It is possible, of course, that the development of the program may show a need for a special agency in the city government to carry out all phases of the housing program. I believe that there are certain advantages to be seen in the establishment of such a separate agency: there is the obvious advantage of greater ease in administration, and there is also the possibility that such an agency would have a higher position in the structure of the city government. However, under the present coöperative arrangement the program can be given a fair test.

There are, naturally, obstacles to be anticipated. One pitfall to be avoided is an unwise selection of neighborhoods to be treated. The housing and neighborhood survey will be our main guide in this matter; but other things besides the physical condition of the neighborhood must be taken into account. For one thing, a careful analysis of cost of rehabilitation must be considered in light of the income-producing potential of the property in the neighborhood. We also must consider the attitude of the neighborhood in making our selection. Are the people apathetic or enthusiastic about the plan? Bad judgment in evaluating any of these points can lead us into difficulty. Another obstacle to be overcome is the lack of understanding, generally, about the aims of the program. The fact that this is *not* primarily a slum program is, unfortunately, not very well understood by our citizens. The program is new; and to this fact we can attribute some of the misunderstanding. However, there are other complicating factors. For one thing, there is so much talk today of slum clearance, area redevelopment, public housing, and so forth, that people find it difficult to keep things straight. This program is not in conflict with other projects; and we face a distinct challenge in explaining to the man in the street just what we are trying to do and where this program fits into the whole housing picture.

What have we done so far? First let me say that the program is already under way. The housing and neighborhood study is already started. We have finished staffing our field force and we have employed a specialist to sparkplug the educational side of the job.

Actually, we have been gathernig data on a part-time basis for the past three years. Of the 82 districts which our City Plan Commission calls residential, studies have been carried out in about 3 so far. And now that we are fully staffed we figure that the study will be finished by this time next year. By that time we hope to have the rehabilitation phase of the program well under way.

There is one other point that should be brought out. While the program just outlined is not designed to be applied in the slums, we cannot forget—and we have not forgotten—the people who are forced to inhabit the slums. In the long view the only solution to the slums is complete demolition and reconstruction. But, realistically, the time is not yet here when the slum problem will be solved. Therefore, we have worked out a modification of our program—and this is primarily a Health Division venture—whereby we attempt to relieve, for the time being, some of the worst conditions in the slums. We have selected a few of the most deplorable areas in the slums and, through the enforcement of sanitation and rat control measures, have attempted to raise these areas to a level of bare livability at least. We are not expecting any miracles—and are not getting any—but we are rather gratified with some of the results so far. These areas are still slums. But we find that even under the worst handicaps people will coöperate to improve their living conditions.

All of these housing improvement programs, even if they function as well

as we hope, will not fully meet the housing problem of the city. It will take many years to see results. To handle the problem immediately and fully, either in the slums or in blighted areas, would require costs to city, to property owners, to tenants which are beyond reason. These are beginnings in the concerted war against housing deterioration.

"Imagination is the beginning of creation. You imagine what you desire; you will what you imagine; and at last you create what you will." George Bernard Shaw said it. It is the kind of thinking we must apply to solve our housing ills.

Most Americans have a yearning for the easy way to do things. In housing as in other complex problems in our socio-economic world there is no easy way. History, as recently pointed out by Toynbee, gives grim testimony to the illusion that there is an easy way by pointing up the vanished "societies" who thought there was an easy way.

We look forward to more imaginative thinking and planning, to further research in the laboratory and in the field, and to practical men to devise, to sift, to adjust, to sell, and to apply these ideas.

REFERENCE

1. Rumbold, C. *Housing Conditions in St. Louis: Report of the Housing Committee of the Civic League of St. Louis.* St. Louis: Civic League of St. Louis, 1908.

Senate's Local Health Units Act

By a vote of 38–35, the Senate passed the Local Health Units Bill, S. 445, on March 16, after having failed to pass it on the consent calendar a few days earlier. The bill was sponsored by the National Congress of Parents and Teachers and introduced by a bipartisan group of 15 senators.

S. 445 is the same bill that was passed by unanimous consent by the Senate as S. 522 in the 81st Congress. It provides for federal aid to states for the establishment and maintenance of local health services. As in the Hill-Burton Hospital Construction Act, a prerequisite for the allocation of funds is a state plan designed to provide everyone in the state with at least basic minimum public health services. In designating the Public Health Service as the agency to administer the Act, provision is made for the setting of certain minimum standards for size of population to be served, merit system operation, and others.

Hygiene of Housing

Contribution of the American Public Health Association to Housing Evaluation *

CHARLES L. SENN, F.A.P.H.A.

Engineer-Director, Bureau of Sanitation, Los Angeles City Health Department

THE Federal Housing Act of 1949 is providing new stimulation to local slum clearance and blight elimination programs. In several communities the local health departments are working side by side with other agencies to determine where available housing funds should be spent to do the greatest overall good for their communities. This participation has resulted from the Association's development of housing survey and evaluation procedures.

In view of the wording of the federal housing law it is natural that health departments should participate in these programs. Congress, in its "Declaration of Policy" said it is necessary "to remedy the unsafe and insanitary housing conditions . . . injurious to the health, safety and morals of the citizens of the nation." Health departments that conduct active housing enforcement programs are definitely brought into the picture by Section 10 of the Federal Act. This provides that the governing body of the community shall enter into agreement with the local housing agency, to the effect that within five years after completion of low-rent housing projects there will have been eliminated by demolition, condemnation, effective closing, or compulsory repair or improvement, unsafe or insanitary dwelling units substantially equal in number to the new units provided by such projects.

Acceptance of the aims of public health as outlined in a frequently quoted definition to involve ". . . promoting physical and mental health and efficiency . . . ," automatically causes us to accept housing improvement as a definite public health responsibility. In keeping with the phrase of the definition ". . . through organized community efforts," the Association's housing evaluation program incorporates the principle of teamwork between the various interested official agencies.

From the standpoint of the health department, housing surveys provide a wealth of valuable information concerning environmental conditions in older areas where sanitation problems are apt to be most acute. The survey data show the extent to which premises and living quarters are infested with rats and rodents. An accurate picture is made available to the health officer or sanitation administrator who wishes to know the extent of overcrowding, plumbing stoppages, garbage and waste accumulations, and other general insanitary conditions in the surveyed area. In some communities the survey data have shown the need for improving housing and general sanitation legislation and convinced the governing bodies of the need for additional inspection personnel.

* Presented at a Joint Session of the Engineering and Health Officers Sections of the American Public Health Association at the Seventy-eighth Annual Meeting in St. Louis, Mo., November 2, 1950.

The most important benefit to the health department program results from making available suitable low-rent, public housing units for families which must be vacated from unfit dwellings. In Los Angeles the City Housing Authority has requested the Health Department to survey the dwelling units of all applicants who request public units on the grounds that their existing quarters are unfit. These surveys would be made in accordance with the standard Association evaluation schedules. This type of program should go a long way toward preventing or disproving claims that units are being assigned on the basis of favoritism. When the health department certifies that a family's quarters are so unfit that a public unit should be assigned, it can justify the prompt invoking of its legal authority to post condemnation and vacating signs so that the building cannot be reoccupied. In coöperation with the building department, many such buildings can be demolished. Some will revert to their original intended use as garages, sheds, retail stores, etc. Others will be repaired and renovated. This program is in keeping with Dr. Winslow's statement, "It cannot be too strongly emphasized that rehabilitation of existing bad housing is limited in its applicability by fundamental economic law; that demolition of existing bad housing does not help the unfortunate tenants unless they have good housing into which they can move. The negative approach of condemnation must go hand-in-hand with the positive task of rebuilding our cities and our countryside."

Teamwork is sure to develop wherever the Association's evaluation program is utilized. This begins when the interested official agencies meet to decide what type of information each desires; what are the aims and objectives of each; in which areas should studies be made.

The contribution of the Association in selecting areas and in the entire planning for community improvement is covered in a statement by the Los Angeles Director of City Planning, Charles B. Bennett.

"From the standpoint of the Los Angeles City Planning Commission, the contribution of the American Public Health Association in evolving a new technique for housing evaluation has proved of tremendous value. Whereas the former methods of using data developed by the United States Census Bureau, and the local health, police, probation, and social service agencies, were helpful in ascertaining the general locations of slum and blighted areas, the new procedures of the A.P.H.A. have refined the process to the extent that substandard areas can be 'pinpointed' and the precise degree and extent of blight and slum conditions are readily determined.

"The chief difficulties in the past were the defining of the exact boundaries of the blighted areas, and the assembly of sufficient pertinent information that would establish the indisputable presence of blight. Most of the available statistics had previously been gathered on a census tract or block basis, which did not generally lend toward precise findings for portions of census tracts or blocks. Furthermore, the data were frequently of a haphazard character, and not sufficiently complete for the intended purpose.

"The housing appraisal technique of the Committee on the Hygiene of Housing of the American Public Health Association has overcome the failings of the earlier methods. A field check is made of every structure and dwelling unit within a study area, during which a careful inspection and analysis is made of physical and environmental conditions. Supplementary information is likewise obtained directly from the occupants, relative to essential social and economic characteristics prevailing within the study area, including such factors as rent, incomes, ownership, occupancy, etc.

"In view of the necessity of establishing the validity of condemnation proceedings in court, it is of extreme importance that, first, the supporting data be accurate and conclusive; and, second, they be presented in a manner to be readily grasped and understood.

"The Planning Department staff has prepared a series of maps and charts for each study area. These incorporate the findings of the field surveys and clearly outline the location and show the extent of blighting influences and substandard housing within the respective areas. Since all the information presented is based upon the standards estab-

lished by the Association and can be substantiated by referral to the original field records, these exhibits should bear great weight in a court test.

"While the survey method is of particular concern in housing and community redevelopment studies, it also has a direct relationship to many other functions of the City Planning Commission. For example, it helps in the determination of the most appropriate land use of an area; i.e., whether it should be used for residential, commercial, or industrial purposes. Once the study areas have been properly evaluated, the boundaries of the proposed redevelopment or housing areas delineated, the Planning Commission is in far better position to plan for essential utilities and public improvements such as major highways and freeway routes, schools, recreational areas, police and fire stations, and a wide variety of other municipal facilities.

"Through refinement of the technique of housing evaluation, the American Public Health Association deserves the gratitude of all those who desire to eliminate unhealthful conditions and make ever better and more wholesome cities in which to raise our families."

In every community there are organized groups who strongly oppose public housing. Residents of areas selected for slum clearance promptly and publicly deny that their neighborhood is of slum character. The ways in which the Association's evaluation procedures help the Housing Authority, in these and other problems, is covered in the following statement from the Los Angeles City Housing Authority's Executive Director, Howard L. Holtzendorff.

"When the Housing Authority began its search for the best possible sites on which to locate 10,000 units of low-rent public housing, it was faced with a dilemma. Accurate and detailed information on all proposed sites was essential before final selections could be made. However, any survey conducted by the Housing Authority would have exposed the entire program to attack because charges of bias would have been made and would have been difficult to refute.

"The American Public Health Association technique of conducting the required survey solved the problem. The use of the name of the American Public Health Association lent prestige to the entire project and gained almost universal acceptance of the findings. More than that, it brought together local community agencies to work in close coöperation on the job.

"Actually, it is difficult to decide in which phase of the Authority's program the American Public Health Association technique will prove most valuable. The findings have played an important part in almost every decision so far, and it is anticipated that they will prove just as valuable in the subsequent stages.

"Without the detailed analysis of each structure in every block of the proposed areas, selections of final site boundaries would have been difficult, if not impossible. At the very least, the knowledge that its decisions are backed by sound scientific data makes it possible for the Authority to present its program to the public with complete confidence. The accurate, well organized data give a firm foundation for any legal defense which may prove necessary.

"The social information furnished through the survey has proved, and is proving, equally valuable. The Authority has been able to plan the number of three, four, and five bedroom dwelling units which will be necessary in the new developments. This would have been impossible if the information on the sizes of families were not available from the survey.

"Again, in its relocation program, the Authority, as a result of the survey, is in possession of vitally necessary information. It knows the number of families eligible for public housing and those who are not eligible. It knows the number of standard homes in the areas and the incomes of the families. Relocation plans can be made in advance on the basis of this information without conducting any further investigations.

"In short, the American Public Health Association technique has made it possible to approach a tremendous task in a scientific manner. The Authority is now in a position to do not only a quantitative job, but a qualitative one as well."

Federal housing legislation establishes the principle that wherever possible, private industry should be encouraged and helped in its development of housing projects. Certain slum and blighted areas may be acquired by local redevelopment or land clearance agencies, cleared, and then leased or sold for redevelopment by private organizations. Redevelopment of such areas must be in accordance with the approved master

plan of the community. The Executive Director of the Community Redevelopment Agency of Los Angeles, Percival G. Hart, for whom surveys were made of tenements in blighted districts of the central metropolitan area and of mixtures of industrial, commercial, and residential areas in railroad districts, said:

"By virtue of the authority vested in the Health Department to enter onto and investigate the condition of property, and in view of the experiences gained in the past use of survey techniques developed for measuring the quality of housing and the living environment, the statistical information furnished by the Health Department is the most authoritative source on which the agency can base many of its studies and recommendations.

"The acquisition of property for a redevelopment project must be preceded by public hearings in which it is definitely shown that the area being condemned is blighted and that its redevelopment is in the interest of the health, safety, and general welfare of the people of the community. The reasons for such acquisition must be clearly stated and backed by specific information with reference to the health and sanitary conditions of the area as a whole, as determined by a survey of each dwelling unit in the area, so as to prove beyond a shadow of doubt the necessity for redevelopment. Therefore, our first step in a redevelopment project is to use studies, made in accordance with Association procedures, as the basis of conclusions for needed action.

"Another way in which these studies form a necessary part of the program is in formulating plans for the rehousing of displaced site occupants. The data furnished with reference to the family structure of the various inhabitants of the dwelling units, including their incomes, areas of employment, and similar data of this nature, give the necessary information to plans for relocation."

The 1950 census data will provide far more accurate housing information, on a nation-wide basis, than was formerly available. This is due to adoption by the U. S. Bureau of Census of certain fundamentals, indices, descriptions, and illustrations of dilapidation, from the Association's evaluation procedures. For the Los Angeles area, arrangements were made by the Housing Authority for the Health Department's housing supervisor, Joseph Sollins, to be appointed a special agent of the Census Bureau. In this capacity he participated in the program of training census bureau personnel in applying the housing criteria, and made certain spot checks to determine that enumerators were correctly applying the standards in collecting housing data.

Health officers, as members of the communities' housing teams, can also lend their prestige and support to securing improved housing regulations. When the surveys show that blight and slum development are promoted by poor zoning, planning, or building regulations, they can vigorously support necessary legislation to prevent the spread of blight. Sanitation program administrators can gear their maintenance programs to the findings of the surveys. This may lead to improved maintenance and occupancy laws. Areas indicated for early slum clearance will not be subject to the same permanent improvement requirements as other areas which are determined to be "salvageable" without major clearance or redevelopment. The close association with the local housing authority, developed through application of evaluation procedures, establishes channels whereby eligible families found by the health departments to require eviction from unfit quarters, may be given priorities for placement in low-rent public housing units. Coöperation with redevelopment agencies may lead to the elimination of some of our worst housing conditions in tenement and rooming house areas, or in those worst housing areas where aged and neglected dwellings are interspersed between junkyards and gas plants.

Improved public health and sanitation are usually the main "sales arguments" for slum clearance, redevelopment, and low-rent public housing. The Association has made a real contribution by providing to health officials a procedure

whereby housing and environment may be precisely measured to provide the authoritative data so necessary to gain community support for eliminating our worst housing conditions; to plan and organize for action which will raise the housing standards of our communities.

New Publicity Council Service

To help health, social, and recreation workers in the selection and purchase of printed materials, the National Publicity Council for Health and Welfare Services has inaugurated a new central distribution service on books and pamphlets useful in public education, public relations, and community organization programs. New publications from a wide variety of sources are screened for their usefulness either as reference material for personnel, or as material for distribution to the public. Suitable publications are described in announcements sent periodically to interested agencies and individuals. A further service is that purchasers can get through the council—via a single order blank—any of the books and pamphlets listed, thus making it unnecessary to deal with separate publishers.

The announcements, "NPC Recommends," are available without charge to any health, social, recreation, or education worker. National Publicity Council, 257 Fourth Ave., New York 10.

Changing Patterns of State Health Services*

JOSEPH W. MOUNTIN, M.D., F.A.P.H.A.

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THIS being the year 1950, the Public Health Service is currently engaged in its decennial survey of state health organization and services—a study which has been conducted at various intervals, under different auspices, since 1915. Through this periodic inventory, it is possible to note changes which have occurred in state health activities and administration. Within its scope are included the functions of all agencies in so far as they touch upon human health, not solely those assigned to the state health department.

From material already assembled for the present revision, there are emerging some arresting facts which I think should be brought to attention, pending complete analysis of the material. This preview seems to me to be particularly urgent at this time, when—with very little advance notice—state health agencies may be called upon to do things of quite unusual character in connection with the national emergency. Moreover, in all probability, these new tasks will have to be undertaken in the face of increasing shortages of well qualified personnel. Therefore, it is incumbent upon all of us to streamline as much as possible the administrative framework within which we carry on. Examination of current organization is the first step toward achieving this end. For illustrative material, I have selected an index state in each of the ten regions of the Federal Security Agency. This choice gives both geographic and structural variety.

Two outstanding points are revealed by preliminary analysis of the data assembled: first, addition of new activities to the realm of public health since 1940—when the last comprehensive survey was made; and, second, increasing dispersion in distribution of health functions among the administrative agencies of state government. In fact, because of this extreme dispersion of responsibility among a multiplicity of agencies—with no perceptible governing philosophy of organization and no uniform coördinating authority—it might even be said that no common pattern or identifiable set of principles exists. Not only are numerous agencies engaged in health activities, but also the combinations of governmental units involved in the various services differ greatly from state to state.

In the aggregate, division of responsibility for state health activities is even more pronounced today than it was 10 years ago. At that time, in any one state, the highest number of separate agencies contributing something to the health activities covered was 18. Among the ten index states, the top number in 1950 is 23. For the most part, the added dispersion applies to activities which represent new interests of public health agencies. Within the time at my disposal, I can cite only a few as illustrations—but I have chosen from the total group those which seem particularly

* Presented before the Health Officers Section of the American Public Health Association at the Seventy-eighth Annual Meeting in St. Louis, Mo., October 31, 1950.

timely problems in this autumn of 1950.

Under the present circumstances it is only natural that one would think first about measures for reducing and alleviating traumatic injuries resulting from disasters and similar occurrences. To some extent at least, these may be expressed by organization for accident prevention. In a single state, as many as 7 different agencies—and in the ten sample states, a total of 17—are directing measures to lower the incidence of accidents.

Departments of labor and industrial commissions had well developed programs for prevention of industrial accidents prior to the 1940 inventory. On the other hand, state health agencies are relative newcomers in the accident prevention field. They are concerned chiefly with the physiological and epidemiological aspects of the problem—especially with prevention of accidents occurring in the home. There has been tremendous expansion during the past 10 years in organized programs for control of traffic accidents—both on land and in the air. At present, aeronautics commissions as well as highway departments and departments of public safety are active in this phase of accident prevention. Safety programs designed to lower the number of recreational accidents have been initiated by various agencies in a growing number of states. Obviously, accident prevention is not developing as a single, integrated program but as a series of isolated projects directed separately by numerous agencies toward accidents occurring in particular environments—and the number of different environments recognized as being important is greater than ever before. With the situation as complex as I have described, *which* is the logical agency in this field to assume leadership in the event of emergency?

Since increased industrialization characterizes a period of national emergency, activities for water pollution control acquire added significance. As an unsegregated part of general sanitation, water pollution control had customarily been assigned to the state health department. With its attainment of separate program status, other agencies have assumed more prominent roles.

While the health departments of all but two of the ten index states have been designated as officially responsible for water pollution control, they do not function alone for this purpose. Participation of the health department may be restricted to technical work, while a separate water pollution control board may have power of law enforcement. Other state agencies may operate as follows: The state university may carry on research; the department of conservation, make studies of stream pollution to determine the effect on fish life; the department of mines, control pollution from mines; a separate corporation commission, regulate disposal of wastes from oil wells; and the department of welfare, abate pollution caused by public institutions. Planning and resources boards; departments of public works, agriculture, and natural resources; public service commissions; and offices of the chief state engineer are other units of state government which, under different combinations, participate in water pollution control activities.

Another basis for division of responsibility lies in the definition of pollution. At least one state draws a fine distinction between "contamination" and "pollution." The health department is charged with prevention and correction of contamination, whereas special regional water pollution control boards have authority over pollution control.

In this program, probably more than any other, some attempt is made to tie together the several segments that are delegated to separate agencies. The device of joint planning by councils or committees representing all interested agencies is freely utilized for develop-

ment of mutually productive and well correlated activities. Some states have named the chief engineer of the health department as *ex-officio* technical secretary of the board or commission created expressly for the purpose of handling water pollution control.

Among the public utilities, water supplies are most critical from the standpoint of internal security. Lack of pattern in the assignment of responsibility for pollution control would assume added importance if civil defense needs should require the establishment of a state overall water authority.

Competent civil defense planning in every state must include consideration of the needs of civilians for hospital facilities and health centers. Desirable standards of service, as well as structural adequacy, must be assured with a minimum of administrative involvement and delay. Because of the hospital survey and construction program now operating in every state, state authorities have a much better framework for area organization than was the case 10 years ago. Although for many years the shortage and maldistribution of hospital facilities in the United States have been major deterrents to the provision of optimum medical care, no systematic program for correction of this deficiency had been established prior to 1940. Within the past decade, remarkable strides have been made. However, programs for the expansion and improvement of hospitals have contributed further disparity to the organizational picture of state health services.

The legally responsible agency for this program is the health department in all but one of the ten index states. There, a commission created especially for the purpose has been named as the hospital authority. Regardless of whether the responsible agency is the health department or some other, it is apt to be only one of several governmental units working in the interest of improving hospital facilities. Particularly, is there dissimilarity in responsibility for licensure and inspection of hospitals.

Construction and equipment of modern hospital plants in areas of greatest need is only one step in preparing to meet the demands for additional medical care usually attendant upon an emergency. Equally important are the arrangements whereby not only hospital facilities but also associated home and office care by physicians, bedside nursing care, and laboratory and other diagnostic services might be utilized.

Within the group of sample states, provisions for general medical care of various population groups are more widely scattered among the several governmental departments today than ever before. Agencies participating in this expanding activity include: the state department of welfare or public assistance, state university hospital, state health department, industrial commission, workmen's compensation commission, insurance commission or department, labor department, department of veterans' affairs, and bureau of motor vehicles.

Direct provision or purchase of medical, hospital, and bedside nursing services for one or more designated groups of recipients represents the major contribution of most of the agencies listed. However, other significant state activities for more adequate medical care are: financial assistance to local political subdivisions for provision of general medical services, administration of workmen's compensation plans and supervision of voluntary medical and hospital insurance plans, licensure of general hospitals, and exercise of regulatory authority over medical care facilities and programs operated by voluntary groups.

While the multiple state agencies concerned with medical care have found some opportunity for coöperative activity, no consistent method of official coördination is employed. Neither has there evolved any agreement as to the

scope of total state obligation for the medical care of its citizens. Recent federal legislation making more liberal provision for medical care of public assistance clients highlights the urgency of developing mechanisms for coöperation among all public agencies involved in health and medical service.

Mental health, perhaps better than any other, demonstrates the fact that, when assigning responsibility for new activities significant to health, states are failing to take full advantage of the broad authority, the technical competence, and the basic interest in total health promotion centered in the health department, which should be the main health agency. While the number of agencies per state concerned with preventive mental hygiene has been reduced, as the fragmentary services of a decade ago have been consolidated and expanded into organized programs, identity of the mental health authority varies from state to state. Departments of health, welfare, and institutions, and special mental disease departments or commissions are found in the roster of state mental health authorities. This diversity of pattern complicates grant-in-aid relationships and routine operations. When the state health department is charged with the preventive portion of the mental hygiene program, it is not usual for this delegation of authority to include control of mental hospitals.

Actually, some reduction is noticeable in the dissemination of health functions connected with relatively well established programs. For instance, there has been some tendency to move to the state health department scattered phases of activity related to tuberculosis control, though in only a few states has there been a shift of authority for administration of state sanatoria. Venereal disease control, health education, maternity and child health services, cancer services, milk and food sanitation, and sanitation of hotels, camps, and bathing places are all slightly more concentrated within the health department now than was the case at the beginning of the 10 year study period. This movement—a feeble one at best—has been more than counteracted, however, by the fact that primary responsibility for a number of activities newly added to the domain of public health frequently is located outside the health department.

While I think it likely that the organizational confusion which I have delineated has retarded our *rate* of public health advancement, I do not imply that progress has been strangled. You know that it has not. In addition to enrichment of the overall program content to which I have already referred, I should like to bring to your attention several more significant changes.

Tuberculosis case finding activities have been revolutionized during the past ten years by application of mass radiography techniques. Replacement of long-term treatment schedules for the venereal diseases by rapid therapy—first on an inpatient, and more recently on an ambulatory basis—represent two complete transitions in this program.

Dental services have been expanded to include a positive preventive aspect with the initiation of topical fluoride programs and addition of sodium fluoride to the public water supply. State laboratory services of a much wider variety are available today than were performed a decade ago. It is now the rule rather than the exception for some agency of state government either to operate cancer clinics directly or to aid them financially.

The field of environmental sanitation has broadened remarkably. Improvement of food sanitation is achieved through education rather than by law enforcement alone. Rodent control programs have moved from the "study" stage into active operations.

Programs of personal health service

ment of mutually productive and well correlated activities. Some states have named the chief engineer of the health department as *ex-officio* technical secretary of the board or commission created expressly for the purpose of handling water pollution control.

Among the public utilities, water supplies are most critical from the standpoint of internal security. Lack of pattern in the assignment of responsibility for pollution control would assume added importance if civil defense needs should require the establishment of a state overall water authority.

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Within the group of sample states, provisions for general medical care of various population groups are more widely scattered among the several governmental departments today than ever before. Agencies participating in this expanding activity include: the state department of welfare or public assistance, state university hospital, state health department, industrial commission, workmen's compensation commission, insurance commission or department, labor department, department of veterans' affairs, and bureau of motor vehicles.

Direct provision or purchase of medical, hospital, and bedside nursing services for one or more designated groups of recipients represents the major contribution of most of the agencies listed. However, other significant state activities for more adequate medical care are: financial assistance to local political subdivisions for provision of general medical services, administration of workmen's compensation plans and supervision of voluntary medical and hospital insurance plans, licensure of general hospitals, and exercise of regulatory authority over medical care facilities and programs operated by voluntary groups.

While the multiple state agencies concerned with medical care have found some opportunity for coöperative activity, no consistent method of official coördination is employed. Neither has there evolved any agreement as to the

scope of total state obligation for the medical care of its citizens. Recent federal legislation making more liberal provision for medical care of public assistance clients highlights the urgency of developing mechanisms for coöperation among all public agencies involved in health and medical service.

Mental health, perhaps better than any other, demonstrates the fact that, when assigning responsibility for new activities significant to health, states are failing to take full advantage of the broad authority, the technical competence, and the basic interest in total health promotion centered in the health department, which should be the main health agency. While the number of agencies per state concerned with preventive mental hygiene has been reduced, as the fragmentary services of a decade ago have been consolidated and expanded into organized programs, identity of the mental health authority varies from state to state. Departments of health, welfare, and institutions, and special mental disease departments or commissions are found in the roster of state mental health authorities. This diversity of pattern complicates grant-in-aid relationships and routine operations. When the state health department is charged with the preventive portion of the mental hygiene program, it is not usual for this delegation of authority to include control of mental hospitals.

Actually, some reduction is noticeable in the dissemination of health functions connected with relatively well established programs. For instance, there has been some tendency to move to the state health department scattered phases of activity related to tuberculosis control, though in only a few states has there been a shift of authority for administration of state sanatoria. Venereal disease control, health education, maternity and child health services, cancer services, milk and food sanitation, and sanitation of hotels, camps, and bathing places are all slightly more concentrated within the health department now than was the case at the beginning of the 10 year study period. This movement—a feeble one at best—has been more than counteracted, however, by the fact that primary responsibility for a number of activities newly added to the domain of public health frequently is located outside the health department.

While I think it likely that the organizational confusion which I have delineated has retarded our *rate* of public health advancement, I do not imply that progress has been strangled. You know that it has not. In addition to enrichment of the overall program content to which I have already referred, I should like to bring to your attention several more significant changes.

Tuberculosis case finding activities have been revolutionized during the past ten years by application of mass radiography techniques. Replacement of long-term treatment schedules for the venereal diseases by rapid therapy—first on an inpatient, and more recently on an ambulatory basis—represent two complete transitions in this program.

Dental services have been expanded to include a positive preventive aspect with the initiation of topical fluoride programs and addition of sodium fluoride to the public water supply. State laboratory services of a much wider variety are available today than were performed a decade ago. It is now the rule rather than the exception for some agency of state government either to operate cancer clinics directly or to aid them financially.

The field of environmental sanitation has broadened remarkably. Improvement of food sanitation is achieved through education rather than by law enforcement alone. Rodent control programs have moved from the "study" stage into active operations.

Programs of personal health service

already in operation have been expanded by extension into several new areas of public health interest. Almost every state health department is now engaged in measures for heart disease, while a few report activities for diabetes and arthritis and rheumatism. More and more, hygiene of aging, directed toward the promotion of physical and social fitness in a population group, daily becoming increasingly significant, is being recognized as a fruitful field of public health endeavor. Programs for making available human blood and blood derivatives are very recent entries in the kaleidoscopic array of health activities with which agencies of state government are now concerning themselves.

Practical health administrators will be interested in knowing that total expenditures for health and hospital services by all agencies of state government in the ten states have more than tripled during the last decade. Now, as then, expenditure figures arrived at are estimates rather than absolute amounts, because those agencies which carry on health work as ancillary activities to their main functions frequently cannot separate precise expenditure figures for health work from expenditures for other types of services. When all necessary allowances have been made, per capita expenditure figures for this selected group of states range from $3.80 to $10.39. The range in 1940 for the same group of states was from $.95 to $3.27. For both study years, these amounts represent total disbursements which can be identified with any of a wide array of activities concerned with health conservation, including hospital care—irrespective of either the state agency performing the service or the source from which the funds were derived. Cost figures for all activities cover services directly provided by the respective state agencies plus financial grants made by the state agencies to local governmental units, hospitals, laboratories, or similar facilities.

From the standpoint of expenditures, the position of the health department among state agencies is somewhat more prominent than it was in 1940. However, even today, in only one of the ten states is it responsible for over one-fourth of the total state outlay for health work. The cost of hospitalization—principally for the mentally ill and for the tuberculous—still overshadows expenditures for all other health purposes. Since administration of mental hospitals, in particular, rarely appears among the health department functions, agencies to whom this responsibility is delegated handle a larger portion of the total health funds than do the main health agencies.

One state agency which has gained a much more conspicuous position in the expenditure picture than formerly is the department of education. This growth is largely attributable to introduction of the school lunch program, the most ambitious state undertaking for improvement of nutrition.

The federal government contributes a larger portion of the total amount being expended by all state agencies for health services than it did in 1940, the percentage having risen from 5 to 12 in the group of sample states. This increase in the federal share, with a corresponding drop in the state's proportionate contribution, has occurred to a varying degree in the several states. In great measure, support of the school lunch program is responsible for the proportionately larger amount from federal sources. It should be emphasized that federal funds still represent a relatively minor part of the total—a fact which some of us are too apt to lose sight of in these days when so much attention centers on national affairs.

By way of summary, I report that the past 10 years have witnessed tremendous growth in both the extent and variety of state health services.

On the other side of the ledger, it is rather disappointing to find that official

state health agencies—established solely for the improvement and conservation of human health—have not forged much farther ahead than other agencies of state government whose health interests are either auxiliary to more primary responsibilities or confined to a single, isolated segment of the comprehensive state health program. There is little evidence of net gain in the concentration within a single agency of widely scattered health activities. Although there has been some disposition to consolidate in health departments previously splintered facets of relatively well established health programs, new programs still tend to develop under a variety of auspices. Greater effort is being made, however, to form a coherent program out of the independent health functions of several agencies.

If I seem to have belabored the points of divided responsibility and lack of uniformity, it is only because of their impact on federal, state, and local relationships for both routine and special demands. The difficulty lies not only in the *excessive number* of agencies involved but also in the fact that they are so *different* from state to state. If the existing structure of state government is to be used effectively across the nation to meet emergency demands, it is important that some degree of similarity should prevail for handling comparable problems. Despite the extensive governmental reorganization which was reported at the last Governors' Conference, states do not seem to be benefiting from this total reorganization in realignment of their health functions.

I recognize that a complete change cannot be effected overnight. Special legislation would be required to correct the basic character of many of the anomalous situations. Pending its enactment, however, a more streamlined kind of organization *can* be evolved, even if the working arrangements are temporary devices for relating common functions. The health department—as the main health agency—should find some way to participate in each type of health activity. This might be accomplished in several ways:

1. Through provision of advice and consultation to the state agency officially responsible;
2. Through assignment of qualified personnel to the responsible agency, thus raising the standards of service furnished;
3. Through performance of selected services, by contract or other arrangement, for the agency administratively responsible;
4. Through studies of the problems involved and recommendations as to how the services might be improved;
5. Through promotion of planning commissions, integrating committees, or coördinating councils on which the health department would always be represented.

Several of these mechanisms are already employed in a few states. I have mentioned steps that are being taken to correlate water pollution control activities. One state has a division of safety in its executive department, with which all other state agencies engaged in particular phases of accident prevention work very closely. Others have established governors' committees, or safety councils which serve as coördinating bodies. Here and there, membership of a special hospital commission includes representatives of the health department and mental health authority staffs.

You will agree, I think, that the situation *in toto* is encouraging. At the same time, we would be remiss if we did not recognize in the findings a challenge to official state health agencies to redouble their efforts to maintain and strengthen their position of leadership among other agencies of state government in all matters pertaining to health, particularly in view of the critical international situation and its possible implications for our internal security.

An Outbreak of Diphtheria in Medford, Ore., 1949

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THE purpose of this paper is to describe certain features of interest in an outbreak of diphtheria in Medford, Ore., and its immediate surrounding area during October and November, 1949. Four points of special interest may be mentioned, namely:

1. It occurred in an area where extensive immunization against diphtheria had been carried out and where previous incidence of diphtheria had been low.
2. The incidence of "bull-neck" cases and the case fatality rate were unusually high.
3. The diphtheria bacilli isolated from patients were of the mitis type. They may have been of unusual toxigenicity.
4. Recommended doses of antitoxin for prophylaxis and treatment were, in several cases, not effective.

These four items will be discussed in turn.

1. Immunization Program and Record of Diphtheria Incidence

Medford, with a population of 17,170, is the center and largest city of the Jackson County Health Jurisdiction, which represents a total population of 58,494, largely rural in character. This county has had an effective and active organized county health department since 1925. From its beginning, immunizations against smallpox, diphtheria, and typhoid (T.A.B.) have been carried on extensively as part of the regular public health activity. At present (January, 1950) over 90 per cent of the school and preschool children have been vaccinated against smallpox and inoculated against diphtheria. Not much emphasis is placed on Schick testing; instead, between the ages of 5 and 9 months triple vaccine (diphtheria-pertussis-tetanus; D-P-T *) is given in 3 doses at monthly intervals. With the second injection, vaccination against smallpox is also given so that the scar may be observed at the time of the last injection of D-P-T. Eighteen months following this last injection 1 "booster" injection of the D-P-T is given.

During the preschool examination of children, or in the first grade, another stimulating dose of the same material, or 1 ml. of fluid diphtheria toxoid, is given. Thereafter, 1 ml. of fluid toxoid is given every 3 or 4 years until the children are about 15 years of age.

Table 1 shows the incidence of diphtheria in Jackson County during the 7 years preceding the 1949 outbreak, the data for the 1949 outbreak, and one year following this outbreak. During October and early November of 1949 re-inoculation was carried out in all children 16 years of age and under, if more than 1 year had elapsed since their last dose of toxoid or D-P-T. As seen in Table 1, no cases of diphtheria have been reported in Jackson County since November 22, 1949.

2. The 1949 Outbreak in Outline

On October 6, 1949, a 12 year old boy was brought to a local hospital with

* Cutter's "Dip-Pert-Tet;" 0.5 ml. is given at each dose.

TABLE 1

Incidence of, and Mortality from, Diphtheria in Jackson County, Oregon

1943–1950

Year	*Cases*	*Deaths*
1943 and 1944	7	0
1945	15	0
1946	10	0
1947	7	0
1948	7	0
1949–Jan. 1–Oct. 1	5	0
Oct. 2–Nov. 22	22	5
1950–Jan. 1–Dec. 31	0	0

severe cyanosis, labored respirations, and extreme cervical adenopathy ("bull-neck"). Although tracheotomy was performed, the boy died within an hour. Post-mortem throat cultures were positive for *Corynebacterium diphtheriae*. Autopsy revealed that the respiratory passages were not obstructed, and that death occurred as a result of myocardial damage. During the next 10 days (referred to in this report as "the first period") 11 additional cases occurred, two of which also terminated fatally, with essentially the same autopsy findings as appeared in the first case. All of these 12 cases occurred in the same school (except 1 preschool child who was a household contact of a case). This is 1 of 4 (1 to 6 grades) schools in Medford, each of which has an enrollment of approximately 500 pupils. All of the cases which developed in the school during this first period (from October 6 to 16) were in children living in different households (except the one contact noted above). The ages of the patients varied from 5½ to 12 years.

The source of this outbreak is believed to have been a boy in the second grade who remained home from school between September 20 and October 1 with a severe sore throat (case No. 1) which, according to the family physician, did not respond to penicillin. No throat cultures were made until October 10, when his 5½ year old sister (the preschool household contact referred to above) expired with diphtheria. A culture from the boy at this time was found to be positive for *C. diphtheriae*. The boy had been in contact with many schoolmates during this interval. The origin of his infection is not clear.

It is of interest to note that the school in question was equipped with drinking fountains with metal spouts. When water pressure was low, many children were said to have been in the habit of placing the lips over the spouts and increasing the flow of water by suction. The cases in this school were distributed by grades as follows:

Grade	*Cases*
1st	1
2nd	5
3rd	1
4th	1
5th	3

From October 16 to November 22, 1949 (referred to in this report as "second period") 10 more cases were reported. During this period none of the cases were in the school in which the first 12 cases originated, but were in more scattered areas and also involved older persons. With a single exception, all of these cases occurred in persons who were either household contacts of, or who otherwise had close contact with, cases developing during the first period. A sister, a brother, an aunt, and a grandmother of case No. 1 had clinical diphtheria during this period, while two uncles of case No. 1 were found to be carriers of virulent bacilli.

As can be seen in Table 2, there were 9 patients (41 per cent) with "bull-neck" among the 22 cases. There were 5 deaths; a case fatality rate of 23 per cent. Four of these deaths occurred in children with "bull-neck." The fifth death occurred in a 64 year old woman who had been admitted, 8 days before the onset of her diphtheria, to the hospital where diphtheria patients were housed. She had not had any known previous contact with cases of diphtheria. Her admission diagnosis was diabetes mellitus, chronic nephritis with

TABLE 2

The 1949 Outbreak of Diphtheria in Jackson County, Oregon

Period	Age	Cases	Bull-Neck	Deaths	Actively Immunized(T)	Passively Immunized(AT)
First*	(1–5	2	1	0	1	0
	(6–12	10	3	3	3‡	1
Second†	(13–14	5	3	1	1	1
	(15–25	0	0	0	0	0
	(26–35	3	2	0	0	1
	(36+	2	0	1	0	0
Totals		22	9	5	5	3

* First period, Oct. 6–16

† Second period, Oct. 17–Nov. 22

‡ Two patients had completed their immunization 4 days before onset of disease—both cases were very mild. One 5½ year old girl (sister of case No. 1) had her initial D-P-T at age 2 years and had had a booster dose exactly 1 year before onset of her disease. She expired.

(T) Toxoid

(AT) Antitoxin 5,000 units

hypertension, and endocarditis. The development of diphtheria in this case was no doubt a result of "cross-infection." Whether her concurrent diphtheria hastened death is not known.

3. Bacteriology

The organisms isolated from cultures obtained by the State Health Department during this outbreak were shown by Dr. Martin Frobisher of the U. S. Public Health Service, Communicable Disease Center, at Atlanta, Ga., to be typical of the mitis type.

Strains of the organisms tested were described as unusually virulent and toxigenic by Dr. William Levin, Director of the Oregon State Hygienic Laboratory. The following is quoted from his report: "Guinea pig tests showed all cultures to be virulent. Chicken inoculations for measuring virulence showed that at least some of the cultures were not only virulent but extremely so. We used culture No. 20488 (taken from a carrier, B. S., uncle of Case No. 1) as the one to work out the virulence. Ordinarily, at least 2 ml. of a 48-hour broth culture of *C. diphtheriae* is used for the virulence test on chickens. We found that 0.25 ml. of a 48-hour culture of strain No. 20488 was sufficient to kill. We found also that we had to use many more antitoxin units than usual to protect the chickens."

It is of interest to note that B. S., from whom culture No. 20488 was taken, at no time had any clinical evidence of diphtheria. His mother, sister, niece, and nephew (case No. 1), all had the disease in clinical form.

4. Antitoxin and Immunization

The apparent extraordinary virulence of the organisms found in this outbreak may explain why diphtheria antitoxin in recommended doses was ineffective in several striking instances. For example, 3 apparently healthy contacts of cases developed severe diphtheria from 4 to 27 days after having received 5,000 units of antitoxin (Table 3 (B)).

A 12 year old boy who was in a very toxic condition, yet with very little membrane, expired 8 days after having received 120,000 units of antitoxin on the second day after onset of illness.

A 29 year old woman with extreme "bull-neck" received 400,000 units of antitoxin during the first 24 hours of her illness. She had a very stormy convalescence, with severe myocarditis, paralysis of the throat, and some paralysis and weakness of both extremities. Between 3 and 5 months following the onset of her disease she also developed a generalized neuritis. Her paralysis disappeared after about 8 months. In October, 1950, she still had cardiac

TABLE 3

Immunization Status of Certain Patients in 1949 Outbreak of Diphtheria

A. Actively Immunized

Age (Oct., 1949) (Years)	*Age at first Immunization*	*Interval since last Immunization*	*"Booster" Dose*	*Type of Diphtheria*	*Outcome*
8	5	3 years	none	"Bull-neck"	Recovery
5½	1	4½ years	Oct., 1948	"Bull-neck"	Died
7	3	4 years	Oct., 1948	Mild	Recovery
12	12	3 days	——	Mild	Recovery
10	10	4 days	——	Mild	Recovery

B. Passively Immunized (5000 Units)

Age (Oct., 1949) (Years)	*Interval between Antitoxin and Onset of Diphtheria (days)*			*Type of Diphtheria*	*Outcome*
7	4	——	——	Moderately Severe	Recovery
7	27	——	——	Moderately Severe	Recovery
32	4	——	——	Severe	Recovery

symptoms and she has stated that her legs still "tire easily."

Her husband, 32 years of age, received 5,000 units of antitoxin as a prophylactic on the day his wife became ill, yet developed the disease 4 days later. He received 200,000 units of antitoxin on the first day of his illness, yet was extremely ill and unable to work for 8 months due to weakness of both lower extremities. The 7 year old daughter of the couple (previously inoculated with toxoid against diphtheria) was in the second grade of the school where the first cases originated. This child had no evidence of clinical diphtheria, but her throat culture was positive for *C. diphtheriae* on the day her mother became ill. This child was classified as a carrier.

Table 3 shows the number of actively and passively immunized children who developed diphtheria in this outbreak.

In Table 3 (A) it is noted that 5 children with diphtheria (23 per cent of the patients) had had previous antidiphtheria inoculations. Two of these had received their second dose of toxoid only 3 and 4 days, respectively, before the onset of their diseases. Presumably therefore, they had not reached a high level of resistance.

DISCUSSION

Active immunization against diphtheria with toxoid obviously does not guarantee protection against diphtheria. Apparent failures of immunization, even in groups with high percentages of inoculated or Schick-negative persons, have been reported all too frequently.[1-5] Nevertheless, as judged by general experience and by the experience described in this report, it affords a valuable degree of protection. In this outbreak, if all cases who had received toxoid be considered, clinical diphtheria was 4.4 times as frequent in non-immunized as in immunized. If the last two patients in Table 3 (A) be regarded as not fully immunized, then clinical disease occurred in a ratio of approximately seven non-immunized persons to one immunized. It is a question whether better results might reasonably be expected or obtained with toxoid as it is prepared today.

The apparent failure of antitoxin as a therapeutic agent in some instances during this outbreak is not a new observation, having been experienced in

Leeds in a similar episode in 1931,[6] and repeatedly since that time in various places. As far as can be learned, failure of 5,000 units of antitoxin as a prophylactic measure, as reported here, has not been previously recorded. The possibility is borne in mind that the infection may already have established itself in these cases before antitoxin was given. The interesting question is raised as to how long before infection, and in what dosage, antitoxin should have been given to afford protection, assuming that antitoxin at any time and in any quantity could have protected these individuals. The idea suggests itself that, as pointed out by Frobisher and Parsons,[7] antitoxin in the blood stream is of only secondary importance in resistance to diphtheria and that resistance is primarily dependent on tissue cells specifically conditioned to localize diphtheria bacilli and their toxins.

This outbreak of diphtheria has demonstrated again that a (seemingly) unusually virulent strain of *C. diphtheriae* can infect a community after a period of years during which few, and only relatively mild, cases of the disease have been experienced, and produce severe disease in spite of what appears to be adequate immunization.

A similar occurrence was observed in Baltimore in 1944.[3] A large proportion (64 per cent) of the 142 patients had had diphtheria toxoid. A hitherto undescribed strain of diphtheria organism, now known as the minimus type, was encountered in most cases, including malignant or "bull-neck" cases. No gravis type organisms were found.[3, 8] About 11 per cent of the patients had severe "bull-neck" diphtheria which had been rare in Baltimore for many years. In Jackson County there were 9 "bull-neck" cases in a total of 22 (40.9 per cent). In the Baltimore outbreak 9 patients died; a case fatality rate of 6.2 per cent. The case fatality rate in Jackson County was 22.7 per cent.

The Halifax, Canada, epidemic,[9] with 891 cases and 22 deaths, showed a similarity to the Jackson County outbreak in that all or most of the deaths in Halifax were due to myocardial failure, which was also true in Jackson County. Many of the Halifax strains of *C. diphtheriae* were also of the gravis type.

In view of the fact that the organisms in Jackson County were all of the mitis type, those in Halifax of the gravis type, and most of those in Baltimore of the minimus type, it is clear that malignant (sometimes referred to as "gravis") diphtheria is not necessarily connected with the gravis type (or any other cultural type) of diphtheria organism. This is further supported by investigations of the Study Committee on Diphtheria of the American Public Health Association.[10]

SUMMARY AND CONCLUSIONS

A sharp outbreak of diphtheria during October and November, 1949, in Jackson County, Oregon, is described, with special reference to:

a. *Clinical type of cases and virulence and type of C. diphtheriae.* Of the 22 cases, 9 were of the malignant or "bull-neck" type, and five terminated fatally. All were due to mitis type *C. diphtheriae* which seemed to be of an unusually virulent character. The deaths were due mainly to myocardial failure.

b. *Active and passive immunization and antitoxin therapy of the patients.* Five of the patients had received full courses of diphtheria toxoid and a "booster dose," 3 within 3 to 4.5 years. Two of these had received their last dose 4 days before onset of clinical disease. Three patients had received 5,000 units of diphtheria antitoxin 4 to 27 days before onset of clinical disease. One patient died 8 days after receiving 120,000 U. of antitoxin on the second day after onset. Two patients received 200,000 and 400,000 units of antitoxin, respectively, on the first day of their illness yet had very severe attacks with marked and prolonged myocardial injury, peripheral neuritis and paralysis (or paresis) of the extremities.

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To add to the completeness of this report my special acknowledgment is made to Dr. Martin Frobisher, Jr., Chief of Bacteriology Section, U.S.P.H.S., Communicable Disease Center, Chamblee, Ga., for reviewing this report and making many helpful suggestions and additions.

A.P.M.A. Award to Dr. Rusk

Howard A. Rusk, M.D., director of the Institute of Rehabilitation and Physical Medicine of the New York University-Bellevue Medical Center, was presented with the 1951 Research Award of the American Pharmaceutical Manufacturers' Association at its recent annual session at Boca Raton, Fla. During the second World War, when Dr. Rusk was in charge of the Army Air Force's rehabilitation program, he first developed what is referred to now as the "third phase of medical care," concerned with the rehabilitation of the patient from the time he leaves his bed until he starts on a job. At the Institute of Rehabilitation, Dr. Rusk is engaged with his group not only in the care of disabled patients, but in fundamental research in physical medicine.

Dr. Rusk is the first clinician to receive this award, which was established in 1947 "in recognition of the work of an investigator who, during the recent past, has made a significant research contribution in the field of medicine or the medical sciences." Among its previous recipients are Dr. Edwin C. Kendall of the Mayo Clinic and Dr. Selman Waksman of Rutgers University, both of whom have also received Lasker Awards of the A.P.H.A.

An Ethnic Reservoir of Tuberculosis*

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TUBERCULOSIS is the greatest single cause of death among the Indians, Aleuts, and Eskimos in the United States and Alaska. The Bureau of Indian Affairs is responsible for the control of this preventable disease in these ethnically similar groups. How well this responsibility can be exercised under existing conditions will be subject to scrutiny in this paper. Previous reports by Mountin and Townsend,[1] Alley,[2] Aronson,[3] Dahlstrom,[4] Reifel,[5] and others, have pointed up the problems of tuberculosis among Indians admirably. It is the intent of this paper to scan further the morbidity and mortality rates from tuberculosis among Indians, commenting briefly on their resistance to the disease, their ethnic characteristics, and finally the methods now in use, and those needed, to control tuberculosis.

Presently, there is little documentary evidence of the existence of tuberculosis among the natives of North America prior to the exploration of Alaska by the Russians, Spaniards, English, and French. Hrdlicka[6] found no evidence that tuberculosis existed prior to the discovery of America. Scrofula and consumption are noted in the medical literature and elsewhere as commonly occurring in Indians in the 18th, 19th and 20th centuries. In 1912, the tuberculosis death rate per 100,000 Indian population (Bureau of Indian Affairs report) was 1,040 as contrasted to 145 among the general population (U. S. Census Vital Statistics). There was a progressive decline in the death rate from 1912 to 1945. The death rates reported in 1923 and 1945, respectively, were 439 in the Indian population and 92 in the general population; 212 in the Indian population and 40 in the general population. Since 1946, a plateau has developed in the death rate among Indians at about 200 while the rate in the general population has steadily decreased until in 1948 it was 30 per 100,000. Approximately 25 per cent of all the deaths recorded on Indian Reservations are reported as due to tuberculosis. The validity of the tuberculosis mortality rates are subject to doubt since the diagnosis is not generally confirmed by sputum and roentgenological examination, and the last estimates of the total Indian population used by the Bureau of Indian Affairs for determining rates are for the fiscal year 1945. There is enough evidence to demonstrate, however, that both the morbidity and mortality rates are excessivly high among the Indians as indicated by spot checks of reservations where the records are adequate, the population relatively stable, and laboratory and x-ray facilities available to confirm the diagnosis.

This ethnic reservoir of tuberculosis is so large as to become a community, state, and national problem because it represents a continuing source for metastatic and direct spread of the disease. The existence of this reservoir in no wise means that the Indian today is peculiarly susceptible to the disease or lacks resistance because of his racial stock.

* Read before the Scientific Assembly of the Section on Diseases of the Chest, American Medical Association, San Francisco, Calif., June 29, 1950.

Since 1935, the Bureau of Indian Affairs has been conducting studies of the epidemiology and morbidity of tuberculosis among the Indians of the United States and Alaska. These studies indicate that the incidence of tuberculosis infection as determined by the tuberculin reaction rises rapidly among the Indians, reaching a peak of 95 per cent in the 20 to 25 year age groups. The incidence of the positive reaction to tuberculin was not influenced particularly by climate, diet, tribal stock, or degree of blood. In 1949, of the 25,495 Indians examined with x-ray, 510 had significant tuberculosis or a rate of 20 per 1,000 as compared to 1 to 3 per 1,000 in studies among the general population. This group was heavily weighted with those of school age. Reports from the Alaska Territorial Health Department in 1950 show 5,279 cases of tuberculosis on the case register or 1 case for every 20 of the general population. The report of January, 1949, from the same source, with 70 per cent of the population surveyed, revealed 3,089 cases of tuberculosis of which 720 were non-native. A survey by the Montana State Division of Tuberculosis Control of the Northern Cheyenne Indians in 1949 [7, 8] provides specific evidence of an ethnic reservoir of tuberculosis. Of the total population numbering 1,902, 84.7 per cent had x-rays of the chest. The 1,611 examined produced 57 cases of tuberculosis, or a rate of 35.4 cases per 1,000 examinations. More startling is the finding that 38 of the cases were discovered in the 1,475 examined, and 19 cases were diagnosed in the 136 individuals of a follow-up survey while attempting to obtain a total group examination. In other words, 2.5 per cent were found to have tuberculosis in the first group examined while 13.9 per cent of the follow-up segment had clinically significant tuberculosis. There are still 190 individuals available but not yet reached in the survey and 101 who are inaccessible. When the last segment is examined, it is conceivable that even a greater percentage will be found to be tuberculous.

The mass disease rate in this group raises the question of resistance of the Indian to tuberculosis. The results of intensive studies by the Bureau of Indian Affairs indicate that the Indian is markedly resistant to tuberculosis. Fibrosis and calcification of pulmonary lesions are frequent while the acute type of tuberculosis seen among the Negroes is uncommon among the Indians. This is of special interest, because the intensity of the tuberculin reaction is as marked among the Indians as in the colored population, yet despite this high sensitivity to tuberculin the types of pulmonary lesions are distinctly different. The causes for the high morbidity and mortality rates must, therefore, be found elsewhere.

Prominent among the causes is the low socio-economic level of the Indians. The annual report of the Extension Branch of the Bureau of Indian Affairs for December, 1949, lists 39,685 resident Indian families having an agricultural income. Fifteen thousand five hundred and eight have an agricultural income below $500 per annum and only 6,057 have an income over $1,500. The United States Department of Agriculture figure for the average agricultural income in the United States is $3,200 per annum. The year 1949, it must be remembered, is noted for its high farm income and prices. The data for less favorable years would be even more striking in relation to the Indian family income. Over one-half of the Indians are not included in this category and exist generally in rural slums under associated conditions of disease and poverty.

Other contributing factors to the spread of the disease are cultural characteristics and gregarious habits of the Indians. It is not uncommon for a tuberculous Indian to visit relatives and friends and to stay overnight or in-

definitely, depending on the circumstances. The necessity of children sleeping with adults and the overcrowding in the one- and two-room homes adds to the opportunities for spreading tuberculosis. The refusal of Indians to remain in the hospital until discharged with consent is partially responsible, but to no greater extent than in many non-Indian hospitals.

The lack of operating funds for the beds available either in the Indian Service or under contract is one of the major causes of the spread of tuberculosis, as well as the inadequate number of beds. There are under contract with state and county institutions 225 beds in the United States and 79 in the Territory of Alaska. The Bureau of Indian Affairs has 929 beds for care of tuberculous Indians in the United States and 499 in Alaska. There is thus a total of 1,732 beds potentially usable to care for tuberculous Indians. Using the accepted ratio of 3 beds per annual death, there is a physical deficit of 1,088, needed principally in Arizona, New Mexico, and Alaska. By 1952, 300 additional beds will be available at Anchorage, Alaska, and 100 at Galen, Mont., leaving a known deficit of 688. Conceivably, this deficit can be reduced to 500 through contracts with states and counties; thus, the existing number of beds might seem to be not too far away from the number adequate to meet the needs.

That this is only partially the case is readily demonstrated by the following data: There are 1,732 potentially usable beds to care for tuberculous Indians. In the fiscal year 1948, there were funds available to operate only 829 of the 1,428 beds of the Indian Service. In other words, in addition to an actual bed deficit, only 58 per cent of the existing beds could be used because of lack of funds. The same condition applied to the 304 beds under contract. The Ah-Gwah-Ching Sanatorium of the State of Minnesota had 118 available beds for tuberculous Indians but funds could be provided to operate only an average of 60 beds. The total picture was not improved in the fiscal years 1949 and 1950. This condition has caused patients already in the sanatorium to be discharged and spread the disease among their families and elsewhere in the community as well as to do irreparable damage to themselves. Obviously, the tuberculosis morbidity and mortality rates cannot be reduced by obtaining additional beds unless concomitantly operating funds are likewise made available.

Another factor precluding an adequate attack on tuberculosis is the lack of continuity in planning, programming, and execution in the field of disease prevention. Many studies and surveys have been made both by Indian Service and non-Indian Service groups. The recommendations made were generally sound but no appreciable change could be made due to lack of funds and adequate number of qualified personnel; thus, the total reduction in morbidity and mortality from tuberculosis has been unimpressive. There is a plethora of studies, reports, and surveys in existence but contrary-wise, little evidence is visible that the recommendations have been followed. Both the Indians and the employees of the Bureau of Indian Affairs are justified in questioning the value of mass case finding procedures when there are no beds or physicians or nurses to provide treatment and care to the individuals discovered having tuberculosis.

Other factors to be mentioned which are important are lack of health education, good environmental sanitation, natural resources, and job opportunities, and placement away from the reservations. The high birth rate resulting in an annual increment to the population despite high mortality rates from communicable disease has had an especially

noticeable effect on the total health problem.

Despite all the problems inherent in the situation, past and present, there has been measurable progress in the control of tuberculosis among Indians. The most noticeable and important advance has been in the active participation of the Indians themselves through the medium of tribal health councils and tribal councils in developing community consciousness of the cause and control of tuberculosis. Many of the tribes have passed ordinances governing tuberculous individuals and their movements in the environment of the reservation including appropriate penalties for nonobservance. Information has been spread to the Indians largely through the tribal councils and, were it not for the participation of these governing bodies, no effective disease control programs could develop.

In another area, the states with an Indian population are participating actively in studies and plans for integrating the public health and disease prevention programs of the Bureau of Indian Affairs with their own. There are now in existence many contractual agreements between the federal and state governments to provide common health services to Indians on the same basis as the general population. The Bureau of Indian Affairs has gradually increased its diagnostic facilities and now has three photofluorographic units working continuously at the reservation level. The states in turn are also including the Indians in their mass x-ray case finding surveys.

Beginning in 1935 and continuing until 1946, a carefully controlled investigation was carried out on the value of BCG vaccine in the control of tuberculosis among Indians. About 3,000 children who failed to react to 0.00002 and 0.005 mg. of P.P.D. were divided in approximately equal groups, half of whom received 0.1 mg. of BCG vaccine intracutaneously while the remaining half received 0.1 ml. of physiological salt solution and served as controls. These children were not isolated before or after vaccination and their mode of living was not modified in any way. Both groups were followed to the same degree by means of x-ray and tuberculin tests annually, and at the end of 11 years approximately 83 per cent of both groups were available for examination. This investigation indicated that deaths from all causes were twice as high among the control group as among the vaccinated group and that death from tuberculosis was nine times as frequent among the control as among the vaccinated. No untoward effects were noted as a result of vaccination, and in no instance was surgical intervention necessary. The tuberculin reaction had persisted in 93 per cent of the vaccinated for 11 years while among the control group approximately 45 per cent who had been originally negative to tuberculin had become tuberculin-positive by the end of the 11th year of the study. The results of this investigation as well as controlled studies in several other areas indicated that BCG vaccine has value in the control of tuberculosis, and the Indian Service has adopted this method as an additional procedure in the prevention of this disease.

In 1948, the tuberculin-negative children in the Point Barrow and Wainwright areas in Alaska and among the Navajos of Arizona and New Mexico were given BCG. In 1949, the children in federal and coöperating mission and public schools in Arizona, New Mexico, Colorado, Utah, Nevada, Idaho, Montana, North Dakota, South Dakota, Wyoming, Oregon, Washington, California, Oklahoma, Kansas, Nebraska, Iowa, and Mississippi who were negative to the tuberculin test and showed no evidence of other disease were given BCG during the spring and fall months. Approximately 35,000 children were ex-

amined and over 13,000 received BCG during 1949 and 1950.

Vaccination with BCG vaccine is now available for the new-born infants at two of the Bureau of Indian Affairs hospitals. This program will be expanded gradually, with necessary controls and safeguards, to include the remaining hospitals to the extent that it is feasible. Plans also include tuberculin testing and vaccination of the school age group in the first year of school life and at puberty.

The techniques used in tuberculosis control among the Indians parallel those among non-Indians and are flexible enough to be changed as accepted methods are improved. However, additional methods of attack are used that are not now considered necessary in the general population, such as the wide-scale use of BCG vaccine. Since monetary limit on the number of beds that can be occupied and the paucity of qualified tuberculosis specialists and ancillary personnel decrease the control measures in these two areas, other techniques must be found and used although they are admittedly less efficacious and acceptable. Variations are necessary also due to the socio-economic status, the diverse cultures, the ethnic differences, the language barriers, and the psychological adjustments which must be made by the Indians. The continued existence of this ethnic reservoir of tuberculosis reflects the inadequacy of the quantity, although not necessarily the quality, of the control program.

The ethnic characteristics of the reservoir are acquired rather than natural. The acquisition and the retention of these characteristics are based upon or coincide with the concentration of Indians within reservation boundaries, the overwhelming of their culture by imposition of that of the non-Indian, the complete change in modes of living without compensating devices to make necessary adjustments to the new way of life, the impact of mass tuberculous infection on a less resistant group, the indifference to the morbidity and mortality from the disease, and today, the lack of continuity of attack due to lack of funds and qualified health personnel to proceed in an all-out attack on this preventable disease.

In conclusion, the reservoir of tuberculosis among Indians does not exist because of an ethnic characteristic of the group but is acquired through fortuitous circumstances over which they have little control.

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Epilepsy—A Problem in Public Health*

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A HEALTH problem becomes a public health responsibility when of such size or character that systematized social action is required for its control. Epilepsy is a double headed (medical social) problem of large proportions. Perhaps three-fourths of a million of our fellow Americans are subject to seizures. In addition, nearly four million other members of the family are directly affected. Remember that Clifford Beers, founder of mental hygiene, blamed his own mental breakdown on his fear of becoming like his brother, an epileptic. How many mothers say through their tears "I guess I am the one who needs to be treated."

Because seizures are predominantly a disorder of youth, we may assume that nearly half the total number, or more than a third of a million epileptics are less than 20 years of age, thus outranking those crippled by cerebral palsy or poliomyelitis. Aside from the large numbers involved, I believe epilepsy is the most neglected, the most intriguing, and the most rewarding of the major disorders of childhood.

Epilepsy is intriguing because it differs widely from other handicapping conditions and because of the wide diversity of its symptoms and associations. Childhood epilepsy is especially demanding of the doctor's deepest ability, the unit of therapy being not the individual, but the family. I shall name five peculiarities of epilepsy in rapid fire order.

1. DIVERSITY OF SEVERITY AND OF SYMPTOMS

No two patients come with the same story. Seizures may recur many times daily or once in a lifetime. A seizure may be a convulsion of such fury that, as the ancients thought, only a demon could be responsible, or it may be only a momentary blackout of consciousness, an unprovoked temper tantrum, a nightmare, an attack of screaming, of abdominal pain, a period of mental confusion, of forgetting, fainting, or even a hallucination of taste or smell. Each of these may spell epilepsy—to one who is expert in spelling. The need for expertness is manifest.

Attacks of petit mal—transient staring spells—are almost limited to the young. In contrast, psychomotor seizures in which the person acts automatically but has no memory of what he did, are uncommon in childhood. Grand mal—or convulsions—occur at all ages.

2. DIVERSITY OF CAUSES

Epilepsy is due to a conspiracy of causes. The two principal conspirators are, first, a predisposition to seizures, represented by an abnormal chemistry of nerve cells; and, second, some acquired brain pathology. Fortunately, only one-fourth of patients give evidence of brain damage. In only one-half can any cause be found, a fortunate circumstance, because the less the evidence of cause, the better is the prognosis.

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3. DIVERSITY OF EFFECTS

On Mentality—Epilepsy *per se* ordinarily has little effect on mentality. Unfortunately, brain damage is encountered more frequently in children than in adults. Perhaps one-third have suffered developmental defects or some injury to the brain at birth or later, or encephalitis may have complicated a childhood infection. The degree of mental defect often mirrors the degree of damage and those most seriously affected join the long line pathetically waiting outside the doors of our state institutions. However, the intelligence of youngsters who have not experienced brain injury corresponds with that of non-epileptics of the same social stratum. Among 200 children seen privately and given the Stanford-Binet test, the average I. Q. for those without evidence of brain injury was 106.5. Among 400 adolescents and adults given the Wechsler-Bellevue test, the average score was 113.9. In both groups the average score of those with evidence of brain damage was 10 points lower. In the older undamaged group, 30 per cent had an I. Q. of 120 or more, classing them as mentally superior. The intelligence scores of patients attending a public clinic are significantly lower. The failure of seizures to depress mentality is best shown by twins. We have studied 125 twin pairs affected by seizures. For example, in one 10 year old identical pair, the I. Q. of the normal boy was 179, and the I. Q. of his epileptic brother was 182.

On Emotions—Considering the strain of unpredictable seizures and almost certain social ostracism, that any escape the effect of psychological trauma is a wonder. But here again, in one person, stabilization of the disrupted emotions may prove a harder task than control of seizures. In another person adverse effects may be strangely absent.

4. THE REWARDS OF TREATMENT

In contrast with illness that results from organic, structural defects such as poliomyelitis, cerebral palsy, arthritis, heart disease, and tuberculosis, the relief from seizures by simple drug therapy can be dramatically immediate. In a matter of days after starting tridione, a child who had been having many attacks of petit mal a day for many years may be completely and apparently permanently freed. For convulsions or psychomotor seizures, a half dozen drugs are available; phenobarbital, dilantin, mesantoin, mebaral, thiantoin, phenurone, and still others are in the testing stage. Here, as in the areas already mentioned, results are diverse and usually unpredictable.

Replies from 680 private patients of all ages to a follow-up questionnaire yielded the following box score.

	Per cent
No attack for 18 months or more	24
Having less than one-half the former number	49
Somewhat improved	17
Not improved	10

Thus, all but 10 per cent were better than with whatever therapy had been used before.

"Speak to us," you may say, "in terms of dollars and cents." If all children could have the specialized diagnosis and treatment now available to but a few, and one in 20 thereby attained later self support rather than being publicly supported, the money saving (at $2,000 a year for 30 years) would be something like a billion dollars for each generation. We must remember that such future savings are the dividends from present and past expenditures. Research investments besides the drugs mentioned, have given us the electroencephalograph, or brain wave machine. This aids in the diagnosis of epilepsy, in prescribing what drug to use, in judging the prognosis and, since the brain wave pattern is a hereditary trait, it may help in advice about marriage and children. Finally, it often tells the sur-

geon what portion of the brain to excise, and is bringing a clearer understanding of the working of that master organ of the body.

We now come to the last, and for this gathering, the most important of the peculiarities of epilepsy.

5. THE HANDICAP OF EPILEPSY IS AS MUCH SOCIAL AS PHYSICAL

The child or the adult, normal in physique and mind, who cannot attend school or hold a job because of an occasional seizure, might as well, occupation wise, be in a wheel chair. Unlike persons with a visible physical disorder, the epileptic and his family carry the twin burdens of fear and secrecy. In some families a murder could not be more carefully hidden. One example out of many may be cited:

An intelligent 10 year old child was having many brief blackouts of consciousness daily, too brief to be noticed by the school teacher. The mother specified that she should not hear the words "petit mal" or "epilepsy," and that in the report to the referring physician their name should not be used. If the fact of epilepsy should become known, she said, the child's father would lose his position as head of their city's government and the family would need to leave and reëstablish itself in some other part of the country. In spite of inter-family secrecy, the parental anxiety had, however, been communicated to the child, for on a day when attacks were unduly frequent she began to cry saying "must I be sent to an institution?"

In Hamlet, Shakespeare said:

> "But like the owner of a foul disease
> To keep it from divulging, let it feed
> Even on the pith of life."

The person who has lost the pith of life is more likely to be parent than patient. As a consequence of forced secrecy, epileptics or their parents, like spies in enemy country, dare not publicly call for aid. Hence, the size and urgency of the problem goes unrecognized and we, the unaffected, must appeal for aid for the affected—at least until senseless misconceptions about epilepsy and abhorrence of those sick with it have been banished.

Public health means more than sanitation. Distorted ideas about an illness can be as contagious as the germs of disease. Fear is catching. If the school teacher "hits the ceiling" when a pupil has a seizure, that pupil is likely later to hit the sidewalk. If the teacher is self possessed, no undue commotion results.

The social therapy of epilepsy has trailed behind medical treatment. In many respects the two are synergistic. For example, activity of muscles and of mind is an antagonist of seizures. The climb up the educational ladder tends to disperse seizures. It tends also to build social and educational assets, for both patient and fellow students. Education for life implies learning from those who are courageously advancing in spite of some physical handicap.

Yet, obstacles to education increase from the grades to college. Who will educate the educators? An inquiry addressed to 1,676 schools of higher learning asking whether scholastically qualified applicants who were epileptic were accepted brought answers from 1,331. Replies were as follows: No rule, 55 per cent; accepted under certain conditions, 27 per cent; not accepted, 18 per cent. Schools of arts and science and those with a large enrollment were the most willing to accept. The total enrollment of known epileptics was only one-tenth of the expected number in this age group.

The diversities that have been enumerated mean that those affected with seizures must be dealt with not as a group, but as individuals, each a solitary person whose condition and potentiali-

ties must be individually evaluated; nor is the epileptic a simple nerve muscle preparation. The truly effective physician assays the spirit as well as the nervous system. A patient who has not experienced any decrease in seizures may nevertheless be eternally grateful because the doctor has allayed unsupported fears and has inspired new courage and confidence. "The physician is privileged to cure occasionally, to relieve often, and to comfort always." More than with most diseases, the person (whether doctor, nurse, school teacher, social therapist, or friend) who deals with persons who are seizured must exercise sympathy and deep understanding. Knowledge of diagnosis and drug therapy can be taught, but unassumed sympathetic understanding is a gift from the gods.

First on the program of school health must be up-to-date medical care. This implies increased interest and knowledge of treatment on the part of doctors generally. It implies the establishment of treatment-training centers where doctors, social workers, psychologists, and technicians may receive instruction and inspiration. One such center was described in the July, 1950, issue of ***The Child***. Implied also, are combination hospital-training schools where children of fair to good intelligence would receive treatment and at the same time education or training for useful work.

Our seriously affected are now herded into mental hospitals or colonies which are generally understaffed, underbedded, and far from centers of medical influence.

Clinics staffed and equipped to give the best care to patients, to train personnel, and to advance knowledge must receive outside support. Each visit to our clinic costs the patient (or his parent) $13 and costs the Seizure Unit an equal amount which must be secured from sources outside the hospital.

As problems of overpopulation creep upon us, the slogan of those who are public health minded must be "not more, but better lives." With proper care, the large majority of our seizured children can be made better—or well.

This brings us to the end of our space and to the beginning of our thesis, "Epilepsy is the most intriguing and rewarding, and (until perhaps today) the most neglected of the major disorders of childhood."

Cessation of Bacterial Motility as a Rapid Test for Germicidal Action*†

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NO test has been available which could be universally applied to determine instantaneously the bactericidal concentration of use dilutions of quick acting germicides. The two common groups of such substances in use at present for general sanitary purposes are the chlorine compounds and the quaternary ammonium compounds. While a universally used chemical test for free chlorine exists, there is no common test for quaternary ammonium compounds. Several chemical tests for specific quaternary ammonium compounds are available but none have had general acceptance or come into widespread use.

There are a number of test kits now available for the determination of residual potency of solutions of Q.A.C. A report by Butterfield, Wattie and Chambers on these kits is illuminating.[1] They examined nine representative Q.A.C. with eleven commercial test kits. Five of the latter were judged to be useless when tested with Q.A.C. dissolved in buffered distilled water. The other six, however, were serviceable in measuring residuals in buffer distilled water, but in natural water as exemplified by Cincinnati tap water, the measured Q.A.C. residuals bore no relation to the active bactericidal residual remaining. Butterfield, *et al.*, stated that ". . . the magnitude of these errors is so great that the results obtained with these kits with natural waters would be valueless and very misleading." Thus, the only present practical method for determining the germicidal potency of Q.A.C. is by laboratory estimation of the number killed in a specified time. This is a relatively elaborate and time consuming test and thus totally unsuited for rapid determinations.

It would be extremely advantageous if a rapid test were developed which could be applied to all fast acting germicides. If, in addition, such a test performed in the field would also demonstrate, in a dramatic manner, the effectiveness or lack of effectiveness of germicidal use solutions, it might perform a valuable educational service as well.

It is believed that such a test, a biological one, is available. The principle of the test is simple. A motile strain of bacteria is mixed with diluted germicide. This mixture is placed immediately under a microscope and examined. Practically instantaneous cessation of motility occurs in the presence of a sufficient quantity of a quaternary ammonium or chlorine compound. In the presence of insufficient quantities there may be

* An abstract of part of this report appeared in *Bacteriological Proceedings*, Soc. Amer. Bact., 50th General Meeting, 1950, p. 64.

† Presented before the Laboratory Section of the American Public Health Association at the Seventy-eighth Annual Meeting in St. Louis, Mo., November 3, 1950.

partial or no discernible cessation of motility. The effect is dramatic and easily recognizable when the treated suspension is compared with a control untreated suspension.

TECHNIC

Description of Bacterium Used

A strain of coliform organisms (Y6) is used in the test. This strain seems to be most closely related to the species, *Aerobacter aerogenes*. The motility of a culture reaches its peak on agar medium, about half of the cells being in vigorous motion, about 3½ hours after inoculation from a fresh transplant. The strain usually remains satisfactorily motile if it is subcultured daily. After a culture is stored for several weeks it must be rapidly passed through 3 to 5 transfers to regain its motility. Selection of individual colonies from streaked agar plates may also be of assistance in this regard.

Culture Medium

The culture medium used is veal infusion agar which has a final pH of about 7.6. This selection, however, is arbitrary and it is very likely that any nutritive agar medium can be used.

Preparation of Bacterial Suspension

Agar slants are inoculated by a loop and incubated at 35° C. overnight. Agar, either in slants or in quart Blake bottles, depending on the quantity of suspension desired, is inoculated on the following morning. Each Blake bottle is seeded with the combined suspension from 3 slants, the growth of each of which has been suspended in 1 ml. of phosphate buffer.* The culture is incubated for approximately 3½ hours and growth harvested in 10 ml. of phosphate buffer. This suspension is diluted with three parts of buffer, for use. The suspension is usually satisfactorily motile for 2 hours. When a small volume of suspension is required, one or several slants of veal agar are inoculated and after 3½ hours incubation the growth of each slant is suspended in 1 ml. of buffer and is then ready for use.

Motility Cessation Test

The laboratory test is carried out at room temperature. One ml. of bacterial suspension and 1 ml. of double the germicide concentration to be tested are placed in the same test tube (6″ x ¾″). (Direct mixing on a cover slip is unsatisfactory.) The test tube is swirled by hand a few times and a portion removed, by pipette or loop, about 15 seconds having elapsed, and placed on a clean cover slip (⅞″ sq.). A concave slide which has been lightly rimmed with vaseline is inverted over the cover slip and the mixture immediately examined (30 seconds after mixing began) under the microscope (270X or 540X). A control of untreated culture suspension is prepared slightly prior to the test and reëxamined simultaneously with it. The control suspension is made by mixing an equal volume of untreated culture suspension with buffer.

The test can be performed in the field with the following slight modifications. An agar slant is inoculated in the morning from an overnight culture and incubated for 3½ hours in the laboratory or in an individual's pocket. The suspension is prepared in the field by placing 2 ml. of buffer over the growth on the agar slant and gently rubbing it off with an applicator stick. One-tenth ml. of the suspension is placed in each of two tubes (2⅞″ x ⅜″), one of which contains 1/10 ml. of phosphate buffer (control) and the other 1/10 ml. of the germicide to be tested. The tubes are whirled and a few drops are removed from each tube onto individual cover slips by means of an applicator stick. Further examination is carried out as described above.

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* Phosphate buffer prepared according to specifications in *Standard Methods for the Examination of Dairy Products*, 9th ed., 1948, p. 209.

Death Rate Test

Simultaneous tests of motility cessation and death rate were run in the experiments described. The death rate test was adopted with modifications, described below, from that advocated by Weber and Black.[2] Thirty seconds after the germicide (Q.A.C.) and culture are mixed, as described above, 1 ml. of the mixture is removed and added to 9 ml. of solution 4A (Weber and Black). This mixture is then plated out in serial dilutions, using sterile tap water as diluent and the culture medium of Weber and Black. The number of organisms used in the test is determined by plating out the control mixture described above. The chlorine compound tested, was inactivated by sodium thiosulfate as described by Weber and Black.

The modifications of the Weber and Black technic are as follows:

1. A motile strain of coliform organism (Y6) is used instead of non-motile U.S.P.H.S. strain No. 198. This is done for two reasons:
   a. The use of a single strain for direct comparison of motility cessation and per cent killed is desirable.
   b. Comparative tests of the lethal effectiveness of Q.A.C. on Y6 and No. 198 show similar susceptibility as indicated below.

Comparative Lethal Effectiveness of Six Quaternary Ammonium Compounds on Coliform Strains Y6 and No. 198. (30 seconds exposure; average bacterial concentrations—105 x 10^6 per ml.)

Q.A.C. No.	Y6	No. 198
1	99.98	99.96
2	99.98	99.68
3	99.9993	99.9997
4	99.50	99.70
5	99.55	99.29
6	99.66	99.51

2. The culture medium used is veal agar rather than T. G. E. agar.
3. The age of the culture used is 3½ hours rather than 24 hours because of the necessity of having a motile suspension.
4. The bacterial suspension is prepared in sterile phosphate buffer rather than distilled water.
5. The tests are carried out at room temperature rather than at 25° C. in a water bath.
6. The lapse of time for action is 30 seconds only instead of intervals ranging from 15 to 300 seconds.
7. The only control used is the titrated control suspension described under Motility Cessation Test above.

EXPERIMENTAL

Comparative Effectiveness of Quaternary Ammonium Compounds as Bacterial Motility Inhibitors and Killing Agents

It is relatively easy to demonstrate the phenomenon of cessation of motility by mixing a selected germicide with a suspension of coliform organisms and examining the mixture under the microscope. The practicability of such a procedure in determining germicide concentration, however, must be demonstrated. Parallel performance of the accepted death rate test is one means of so doing. Thus, simultaneous testing of the same bacterial suspension, using varying concentrations of several quaternary ammonium compounds may determine the comparability of the two methods. Such testing was carried out with 10 quaternary ammonium compounds * and the results are summarized in Table 1.

A glance at the table reveals, in general, a very similar picture for effect on motility and per cent kill. Thus, all ten compounds caused complete cessation of

* These are commercially available compounds. Description of them as furnished by the several companies, follows. The numbers refer to those listed under Rank in Table 1.

1. Alkyl dimethyl benzyl ammonium chlorides.
2. Alkyl (C_8H_{17} to $C_{18}H_{37}$) dimethyl 3, 4 dichloro benzyl ammonium chlorides and alkenyl (C_{16}–C_{20}) dimethyl ethyl bromides in the ratio of 5:1.
3. Di-isobutyl phenoxy ethoxy ethyl dimethyl benzyl ammonium chloride, monohydrate. M. W. 465.5.
4. Alkyl (C_8H_{17} to $C_{18}H_{37}$) dimethyl 3, 4 dichlorobenzyl ammonium chloride.
5. Alkyl dimethyl benzyl ammonium chloride.
6. Cetyl dimethyl benzyl ammonium chloride.
7. Cetyl trimethyl ammonium bromide (the term cetyl is used for an alkyl component which is 90% hexadecyl, 6% octadecyl, 4% octadecenyl.)
8. Dimethyl benzyl higher alkyl ammonium chloride.
9. Higher alkyl dimethyl ammonium bromide; the higher alkyl radical being chiefly cetyl (C_{16}), consists of approximately 90% hexadecyl, 6% octadecyl, and 4% octadecenyl.
10. Methyldodecylbenzyl trimethyl ammonium chloride.

TABLE 1

Comparison of the Effect on Bacterial Motility and the Rate of Kill of Ten Quaternary Ammonium Compounds Tested in Three Concentrations on Coliform Strain Y6

(30 seconds exposure at room temperature)

	Motility Cessation			Per cent Kill					
				100 p.p.m.		50 p.p.m.		25 p.p.m.	
Rank*	100 P.P.M.	50 P.P.M.	25 P.P.M.	Mean	Range	Mean	Range	Mean	Range
1	0	0	1+	99.96	99.92–99.996	99.65	99.30–99.90	33	4 –87
2	0	±	2+	99.90	99.8 –99.97	96	93 –99.3	19	0 –35
3	0	±	1+	99.8	99.3 –99.998	85	72 –99.5	38	18 –74
4	0	±	1+	99.8	99.3 –99.993	89	73 –99	27	9 –66
5	0	±	2+	99.5	99 –99.991	62	23 –94	6	0 –18
6	0	±	1+	99.2	97 –99.994	86	77 –95	5	0 –20
7	0	±	1+	97	93 –99.997	62	26 –80	4	0 –10
8	0	±	2+	95	85 –99.92	29	0 –59	10	0 –20
9	0	±	2+	94	88 –99.7	50	24 –84	5	0 –17
10	0	±	2+	93	83 –99.8	44	0 –70	17	4 –33

* According to mean per cent kill in all concentrations listed.

Motility

0 = Complete cessation of motility.

± = Occasional motile organism only or a few "whirling" forms.

1+ = Decrease in number of motile organisms and/or in degree of motility.

2+ = Same motility as untreated control.

The concentration of strain Y^6 used in these tests ranged from approximately 40×10^6 to 152×10^6 cells. (medium = 69×10^6).

The number of tests on which the data on motility cessation and per cent kill are based are as follows:

100 p.p.m. — 5
50 p.p.m. — 5
25 p.p.m. — 4

motility with 100 p.p.m. and in the tests for per cent kill showed a mean result ranging from 93 to 99+ per cent. The range of variation, however, shows that every one of the compounds gave a per cent kill of 99+, in one or more tests.

Likewise in 50 p.p.m. concentrations, except for one compound which caused complete cessation and 99+ per cent killing in each trial, all compounds as a rule effected almost, but not quite, complete cessation of motility. This means that in each of the latter suspensions, several actively motile or whirling cells could still be discerned. The findings with per cent killed, however, showed great variation, ranging from a mean of 96 to one of 29. The findings concerning the effect on motility with 25 p.p.m. concentrations were quite variable. Some compounds never showed any inhibition, while others were inconstant, at times having no apparent effect and at others causing a definite decrease in motility, a general slowing up, which was marked and readily discernible. The per cent kill tests with the same concentration of germicides yielded very similar reactions. All showed some effect at some time, although the means were low or very low. Six of the 10 showed no effect in one or more trials. It is of interest, finally, to refer again to the compound ranked No. 1 in the table which showed superiority in per cent kill over every other compound at the first two concentrations studied. This difference was also marked in the motility cessation test where there was usually complete cessation at 50 p.p.m. in contrast to the findings with the other compounds.

Whether or not the motility cessation test is another direct manifestation of the lethal effect of the germicide or some parallel effect, it would appear from the above that when it is desired to determine the presence of 100 p.p.m. or more of Q.A.C., motility cessation might be substituted for the per cent killed test where rapid determination of concentration is necessary or desirable.

Application of Motility Cessation to Determination of Germicidal Concentration of a Chlorine Compound

A study was made to determine the applicability of motility cessation to a chlorine compound. The compound was simultaneously studied by the per cent kill method, and parallel observations were made with a Q.A.C. (No. 1 in Table 1) as well. A solution of sodium hypochlorite in approximately 100 p.p.m. concentration was prepared. This was later found by actual chemical titration to be 87.5 p.p.m. The several concentrations of chlorine studied are recorded as decimal parts of 100, however, for the purpose of simplicity. Comparative tests of the chlorine compound and the Q.A.C. were carried out on four different occasions. The findings are given in Table 2.

The chlorine compound, as is observed in the table, produced complete cessation of motility down through 50 p.p.m., and in three of the four trials at 40 p.p.m. It is also noted that the Q.A.C. induced complete cessation of motility at 40 p.p.m. in all instances. The per cent kill test, on the other hand, indicated that the chlorine compound has greater killing potency. Thus it produced 99+ per cent mortality down through 30 p.p.m. and also in three of the four 20 p.p.m. concentrations, whereas, Q.A.C. produced 99+ per cent kill through 50 p.p.m., and in only three of four 40 p.p.m. tests.

It seems, in summary, that the findings with motility cessation as applied to chlorine support and reinforce those with Q.A.C. The two types of compounds show a very similar degree of activity as concerns the motility test. Titration of the compounds by the generally accepted method of per cent kill, however, indicates that the two tests are not completely parallel since the chlorine

TABLE 2

Comparative Effect of a Chlorine Compound and a Quaternary Ammonium Compound in Several Low Concentrations on Motility and Death Rate of Coliform Strain, Y6

	Per cent Kill									
	Chlorine					*Quaternary Ammonium Compound*				
p.p.m.	*Test 1*	*Test 2*	*Test 3*	*Test 4*	*Average*	*Test 1*	*Test 2*	*Test 3*	*Test 4*	*Average*
100	99.991	99.9990	99.990	99.9990	99.997	99.997	99.94	99.98	99.9993	99.98
90	99.9990	99.990	99.990	99.9990	99.994	99.998	99.93	99.97	99.95	99.96
80	99.9990	99.990	99.890	99.9990	99.97	99.997	99.98	99.90	99.3	99.8
70	99.9990	99.990	99.990	99.90	99.97	99.997	99.95	99.998	99.8	99.95
60	99.998	99.98	99.990	99.990	99.990	99.991	99.90	99.990	99.8	99.90
50	99.9990	99.990	99.991	99.90	99.95	99.992	99.50	99.70	99.90	99.7
40	99.9990	99.98	99.990	99.90	99.96	99.91	83	99.60	99.5	99.5
30	99.996	99.97	99.90	99.91	99.93	94	81	87	99.5	90
20	99.8	99.90	99.1	98	99.30	29	7	6	92	34
10	91	16	88	82	69	None	None	3	40	11
	Motility Cessation									
100	0	0	0	0		0	0	0	0	
90	0	0	0	0		0	0	0	0	
80	0	0	0	0		0	0	0	0	
70	0	0	0	0		0	0	0	0	
60	0	0	0	0		0	0	0	0	
50	0	0	0	0		0	0	0	0	
40	±	0	0	0		0	0	0	0	
30	±	±	±	±		±	±	±	±	
20	±	±	±	±		±	1+	±	1+	
10	1+	1+	1+	1+		1+	1+	1+	1+	

The concentration of strain Y6 used in these tests ranged from approximately 51×10^6 to 63×10^6 cells per ml.

Motility

0 = Complete cessation of motility.
± = Occasional motile organisms only.
1+ = Definite decrease in numbers of motile organisms and/or degree of motility.
2+ = Same motility as untreated control.

TABLE 3

Comparative Effect of Several Interfering Substances on Per cent Kill and Motility Cessation Induced By a Quaternary Ammonium Compound

		200 p.p.m.		*100 p.p.m.*		*50 p.p.m.*		*25 p.p.m.*	
		Per cent Kill	*Motility*	*Per cent Kill*	*Motility*	*Per cent Kill*	*Motility*	*Per cent Kill*	*Motility*
Test						*Average*		*Average*	
1	Dist. Water	99.997	0	99.996	0	99.5	±	63	1+
2	(Control)	99.993	0	99.992	0	99.0	±	56	1+
3		99.9990	0	99.9990	0	99.9990	±	81	1+
		99.996		99.996		99.6		67	
4	Sol. A	99.96	0	8	±	20	±	0	2+
5		99.7	0	55	±	23	1+	6	2+
6		99.998	0	51	1+	78	1+	70	2+
		99.90		38		40		25	
7	Sol. A	99.98	±	2	1+	35	2+	0	2+
8	(Double	99.7	±	31	1+	8	2+	0	2+
9	conc.)	93	±	8	1+	67	2+	68	2+
		98		14		37		23	
	Horse Serum	99.998	±	99.996	1+	90	1+	0	2+
10	10%	99.9990	0	85	±	82	1+	2	2+
11		99.9994	±	99.93	±	94	1+	66	2+
12		99.9990		95		89		23	
13	20%	99.9998	±	99.93	±	42	2+	75	2+
14	30%	99.9998	0	99.8	1+	44	2+	60	2+

Motility

0 = Complete cessation of motility.
± = Occasional motile organism only or a few "whirling" forms.
1+ = Decrease in number of motile organisms and/or in degree of motility.
2+ = Same motility as untreated control.

The concentration of strain Y6 used in these tests ranged from approximately 55×10^6 to 72×10^6 cells per ml.

Sol. A = The following ingredients are dissolved in one liter of distilled water which is then autoclaved at 121° C. for 20 min. and adjusted to pH 7.2:

2.222 gm. lecithin (Asolectin)
15.6 ml. "Tween 80"
1.25 ml. Phosphate Buffer

compound is somewhat more effective than the Q.A.C. studied.

Comparative Effect of Interfering Substances on Motility Inhibition and Per cent Kill Induced by a Quaternary Ammonium Compound and a Chlorine Compound

Further analysis of the validity of motility cessation as a means of determining germicidal potency was made by comparative study of the effect of interfering materials on this test and the per cent kill test with both a Q.A.C. and a chlorine compound. The materials used were a combination of Tween 80 and Asolectin commonly used as a germicide inhibiting solution for Q.A.C., in two concentrations, and horse serum, in three dilutions.

in each of the four concentrations of Q.A.C. tested (200, 100, 50, and 25 p.p.m.). The effect on both tests, as might have been expected, was universally proportional to Q.A.C. concentration. Horse serum, on the other hand, had a lesser inhibiting effect on both tests except for the motility test in the two lower dilutions.

The findings with the chlorine compound which was tested in only two concentrations, 50 and 25 p.p.m., are given in Table 4. Tween 80 and Asolectin seemed to have a lesser influence on lethality and motility than did the Q.A.C. and, conversely, horse serum seemed to interfere more strongly with lethality than it did in the case of the Q.A.C. Motility, however, was not as markedly affected.

TABLE 4

Comparative Effect of Several Interfering Substances on Per cent Kill and Motility Inhibition Induced by a Chlorine Compound

		50 p.p.m.			25 p.p.m.		
		Per cent Kill	Average	Motility	Per cent Kill	Average	Motility
Test							
1	Dist. Water	99.93		±	98		1+
2	(Control)	99.99		0	99.3		1+
			99.96			99	
3	Sol. A.*	99.92		±	44		2+
4		99.90		±	14		1+
			99.91			29	
5	Sol. A.	31		1+	28		2+
6	(Double Conc.)	84		1+	None		1+
			58			14	
7	10% Horse Serum	31		1+	56		2+
8		None		1+	None		2+
			15			28	
9	20% Horse Serum	None		1+	None		2+
10	30% Horse Serum	None		1+	None		2+

The concentration of strain Y6 used in these tests ranged from approximately 49×10^6 to 55×10^6 cells per ml.
* = See footnote to Table 3.
Motility
0 = Complete cessation of motility.
± = Occasional motile organism only or a few "whirling" forms.
1+ = Decrease in number of motile organisms and/or degree of motility.
2+ = Same motility as untreated control.

It is seen in Table 3 that the Tween 80 and Asolectin combination in both concentrations had a fairly uniform inhibiting effect on lethality and motility

It might be concluded, that the evidence obtained with these interfering substances supports a hypothesis that both tests are a manifestation of a simi-

TABLE 5

A Field Trial in Eating Establishments of the Motility Cessation Test on Quaternary Ammonium Compounds

(30 seconds exposure, strain Y6)

Establishment No.	Type *	Field Motility Test	Laboratory Per cent Killed Test (Two Trials)
2	R	0	99.4, 70
4	S.F.	0	99.9, 93
6	B.	0	88, 90
10	L	0	83, 94
14	B	0	10, 73
18	B	0	0, 16
13	B	±	99.5, 96
16	B	±	93, 94
7	B	±	88, 92
9	B	±	88, 90
17	B	±	0, 18
8	B	1	82, 93
12	B	1	33, 25
5	B	1	8, 36
11	R.&B	1	13, 8
15	B	1	9, 3
1	L	2	0, 0
3	B	2	17, 0

* B = Bar, L = Luncheonette, R = Restaurant, SF = Soda Fountain.
The concentration of strain Y6 in these tests ranged from approximately 47×10^6 to 69×10^6 cells per ml.
Motility
0 = Complete cessation of motility.
± = Occasional motile organism only or a few "whirling" forms.
1+ = Decrease in number of motile organisms and/or in degree of motility.
2+ = Same motility as untreated control.

lar but not absolutely identical effect.

A Field Trial of the Motility Cessation Test

One of the possible uses of the motility cessation test is for instantaneous determination in the field of the presence of adequate germicidal concentrations in use-dilutions. Apparently as was pointed out earlier, there are no adequate field tests for Q.A.C. Accordingly a field study was carried out. Visits were made to various taverns and eating establishments to determine whether Q.A.C. in actual use could be evaluated by means of the motility cessation test.

A portion of the use-dilution at each location was examined for motility cessation and another taken for laboratory determination of death rate. The Q.A.C. use-dilutions in a total of 18 establishments visited were studied. The findings and other pertinent information are listed in Table 5.

It is noted that there is fairly good correlation between the absence or degree of motility in the use-dilution as determined on the spot and the per cent killed test carried out in the laboratory. Apart from some relatively minor divergencies all but two of the samples, those obtained in establishments 8 and 18, showed good correlation between both tests.

The first mentioned did not show the degree of motility inhibition which the per cent killed finding would call for. The other aberrant sample showed fairly comprehensive inhibition of motility but a per cent kill which was not nearly as marked as expected. It should be noted that in these field trials frequent contamination of the germicidal rinse with various soap or other detergent compounds or organic matter was observed. It is not known whether or not this was the cause of the above mentioned divergencies.

DISCUSSION

The phenomenon of motility cessation is somewhat spectacular from a visual aspect. When concentrations of 100 p.p.m. or greater of fast-acting germicides such as quaternary ammonium compounds or chlorine are added to a suspension of very actively motile coliform organisms, practically instantaneous cessation of motion occurs.

It is probable that the most practical application of the phenomenon of motility cessation lies in the field testing of fast-acting germicides. Most standards require a very high percentage of kill in a short time and the test can as a rule detect a concentration necessary for this practically unequivocally and distinguish it from less potent ones. It is noteworthy that the concentration of germicide tested in the field test is only about one-half of the actual use-dilution. Thus, a large margin of safety is provided.

The tests carried out in food establishments indicated on the whole that the motility cessation test is a practical one. The drama of the sudden cessation of motility when a rapidly swimming culture is mixed with a germicide is not entirely lost on the field operator. It allows him for the first time to see how germicides, whose function he has accepted on faith, actually work.

The usually complete motility cessation noted with concentrations of 100 p.p.m. practically mitigates subjective bias in such tests since the change observed is from all to nothing. Even though, as has been shown, differences between concentrations of 50 p.p.m. and 25 p.p.m. can be discerned, the test at such concentrations is more subjective since there is a gradual shading of effect until the point of no effect at all is reached.

The absolute relationship of the motility cessation test to the recognized per cent killed test is apparently not completely settled by the experiments reported here. It is natural to expect, as was found, that when 99+ per cent of organisms are killed at 30 seconds, such a suspension should be non-motile when viewed simultaneously under the microscope. This correlation, however, is not as complete when germicidal concentrations less than 100 p.p.m. are considered. Studies on the comparative effectiveness of quaternary ammonium compounds and chlorine as measured by motility cessation and per cent killed as well as on the effect of inhibitory substances on both tests when these same germicides are used indicate a parallelism but not absolute correlation.

It should be noted, finally, that this use of the phenomenon of motility cessation as an indication of germicidal action is not the first of its kind. After the work reported here was largely completed, the existence of a paper on this general topic in the dental literature was called to our attention. Rosenthal, 1937,[3] used undifferentiated mouth flora as test agents for dental germicides. He mixed microbial material taken directly from his own mouth with germicides being studied and examined the mixture under the microscope.

SUMMARY

A rapid test for the determination of the bactericidal concentration of fast acting germicides is presented. This test consists of examination by microscope of a mixture of a pure culture of actively motile coliform organisms and the germicide to be tested. Observation of cessation of motility 30 seconds after mixture usually is an indication of the presence of a concentration which will kill the great majority of organisms in the same time interval.

This is the first test which can be applied in the field on all quaternary ammonium germicides. Furthermore, it can be used on chlorine compounds as well. The materials and equipment needed for the test are simple except for the fact that a microscope is necessary.

Findings with the motility cessation test, as a rule, are parallel but not identical with the recognized per cent kill test.

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Veterans Administration Home Care

The Veterans Administration has announced an extension of its Home Town Medical Care Plan to include part-time home nursing. Through contracts with existing community nursing agencies, home nursing visits are authorized for those patients needing such care for a condition which may be treated by the Administration. Requests for the home nursing care must be made by the physician to the regional office of the Veterans Administration which forwards the approval and authorization to the nursing agency. In cases requiring immediate nursing care, the physician is authorized to request the nursing agency directly to make one or two visits without prior authorization of the Regional Office.

The Home Town Medical Care Program of VA provides for the care of veterans by private physicians on a fee basis. It is a part of the Administration plan to keep veterans in their own communities and make use of community facilities wherever possible. Medical and nursing care in their homes reduces the demand for hospital beds for veterans.

Meteorology and Industrial Hygiene*

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INDUSTRIAL hygiene and meteorology are connected through their relationships to air pollution inside and outside of industrial plants. Many pollutants acting together have irritating effects, and at higher concentrations they may be toxic. Forced and free ventilating systems are most likely to fail in very cold and very hot weather, respectively. By an increase in stack heights, pollution at the ground is decreased. If the wind becomes stronger or more gusty, ground pollution from low stacks decreases, and from high stacks increases. Thermal instability, associated with a rapid decrease of temperature upward, makes ground pollution decrease when the latter is a maximum at the ground and increase when it is a maximum above the ground. During a normal weather sequence, the worst pollution generally occurs just after the passage of a high pressure area, which is characterized by light winds, warm dry air aloft, and no precipitation. The pollution is worst in small valleys with steep walls, usually during the fall. Maximum pollution usually occurs between sunrise and noon because of the mixing of surface air with polluted air aloft, the arrival of a polluted sea breeze in coastal cities, photochemical effects of sunlight, or the commencement of plant operations. Quantitative relationships between meteorology and industrial hygiene can be determined by gathering and correlating statistical data.

I. *Introduction*

A direct connection between meteorology and industrial hygiene may be found in the large changes in the incidences of common infectious diseases with the changes of seasons during the year.[1] Since these variations in disease frequency apply to the general public, they undoubtedly apply to industrial workers, but are not necessarily related to conditions peculiar to the air in and around industrial plants. This paper is concerned with only those meteorological factors which affect industrial workers through changes in the pollution of the air to which the workers are exposed. This subject can be divided naturally into three relationships, each of which will be considered separately as follows: (1) the relationship between industrial hygiene and the pollution of air inside industrial plants, (2) the relationship between pollution of air inside and that immediately outside plants, and (3) the relationship between outside air pollution and meteorology. The principal emphasis of this paper will be on the last relationship.

II. *Industrial Hygiene and Air Pollution Inside Industrial Plants*

The toxic effects of solid, liquid, and gaseous air pollutants is of more concern in industrial plants than in the general outside atmosphere, where their concentrations are usually too low to be proved harmful to public health.

However, even though toxic concentrations are not reached, smaller concentrations of a number of pollutants occurring together may bring about irri-

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tation, for which it is not necessary that any single pollutant reach a concentration strong enough to cause irritation by itself.[2] The skin and even more frequently the eyes may feel irritated in polluted air. Cases of irritation of the respiratory tract also occur, causing physiologic deterioration, which may lead to the serious result of circulation failure in extreme cases.[2]

The extent of both irritating and toxic effects of pollutants in industrial plants naturally depends on their concentrations and the durations of such concentrations. Therefore, it is important to know what affects these concentrations. This phase of the subject will now be considered.

III. *Air Pollution Inside and Outside Industrial Plants*

Heavy pollution of the air inside industrial plants may be produced by industrial accidents, which fortunately are rare.

Under normal operating conditions, the amount of indoor pollution depends to a great extent on ventilation. Two types of ventilation will be discussed: (1) forced ventilation through outlets with no planned inlets, and (2) free convective ventilation through both inlets and outlets.

Forced ventilation by means of mechanical blowers or steam jets is usually effective as long as it is possible for about as much air to enter a plant as to leave it. If inlets are not provided, successful ventilation depends on inflow drawn through open doors and windows. During very cold weather, when all doors and windows are closed tight, forced exhaust reduces slightly the amount of air inside a plant. The resulting drop in pressure inside the plant creates a pressure gradient force across the ventilation outlets which opposes the outflow so that ventilation of the plant may no longer be adequate. In extreme cases, the pollution in the plant becomes excessive with an undesirable increase in the concentrations of air-borne materials indoors.

Free ventilating systems, with inlets usually at lower levels than outlets, operate efficiently when the temperature inside a building is much higher than that outside, as for example in hot operations (typical of such systems) or during cold weather. Trouble might arise if operations involved no heating and the weather outside were very hot. If the temperature outside is higher than that inside, the flow through the ventilating system tends to be reversed. Another way in which the ventilation may be reversed is by a strong wind blowing directly into outlets.

Even if the ventilating system is working properly, its effectiveness is based on the assumption that the incoming air is fresher than the polluted air leaving the plant. At times, the inside air may be polluted less than the outside air, such as on some calm days with fog or low clouds. The problem then is to judge the degree of pollution of the incoming air on the basis of the local weather conditions. Discussion of the relationship between atmospheric pollution and meteorological factors will be the subject of the remainder of this paper.

IV. *Air Pollution Outside Industrial Plants and Meteorology*

The height of a stack affects the concentration of the effluent at the ground on its leeward side. In general, the ground concentration close to the stack is diminished by making the stack higher, which has the effect of shifting the position of maximum ground concentration downwind.[3] The stack height proves to be an important factor when the solid particles emitted by the stack are very small and when the wind is not gusty. Air-borne pollutants of such small size move chiefly with the wind rather than fall to the ground immediately.

Wind speed and turbulence are the chief factors affecting the concentration and volume of an effluent from a stack. As a strong wind mixes a large volume of air with the effluent at its source, the resulting pollution is small, but extensive. Likewise the pollution decreases in intensity and occupies a larger volume downwind in turbulent conditions, which diffuse the effluent still further by admixture with other air. Ordinarily, a strong wind is turbulent, but if the wind is steady, the concentration and volume of the effluent change only slightly for long distances downwind.

At the ground level, the pollution caused by low stacks or outlets on buildings is diminished by strong gusty winds. On the other hand, the ground pollution from tall stacks, though less intense, is increased by gusty winds, which bring the effluent down to ground level by means of vertical turbulence; but, even so, the winds are strong enough to prevent any important accumulation of pollutants at the ground. When a large number of pollution sources are simultaneously active in an industrial area, it is easier to consider the total pollution than to find the effects of the individual sources and to obtain their sum. If the pollution is a maximum at the ground, any vertical motion of air diminishes the ground concentration, whereas, if the pollution increases with height, vertical currents increase ground pollution.

The presence or absence of vertical currents depends on the intensity of turbulence and of thermal stability of the air near the ground. Weak turbulence is associated with light winds over any kind of terrain and with moderate winds only over smooth level terrain. Thermal stability is indicated by a small decrease or any increase of temperature with increasing height above some level within a few hundred feet above the ground. The combination of weak turbulence and strong thermal stability offers no relief at ground level when the maximum concentration of pollution is at the ground. This combination is particularly troublesome because it usually occurs with light winds, which keep the pollution intense in the immediate vicinity of the industrial plants producing it. Some relief may result if precipitation starts falling, carrying to the ground with it some solid or liquid pollutants.[4] Much more relief can be produced by an increase in wind, turbulence, or thermal instability.

By relating these elements to the general weather pattern, local terrain, and seasonal and diurnal effects, it is possible to anticipate where and when severe pollution is likely to develop or terminate. The combinations of circumstances most likely to create a dangerous pollution hazard are discussed below.

Consider the variation of pollution during a typical sequence of weather, starting with a low barometric pressure. As the barometer starts rising, a new mass of cold air arrives from the west behind the cold front of the general storm that has just passed. With the weather clearing, pollution reaches a minimum in the fresh air, often characterized by gusty winds and thermal instability. As the high pressure center approaches from the west, the wind diminishes to a light variable breeze, which is no longer turbulent. With the stagnation of the air, pollution starts to increase and reaches its maximum concentration at the time of greatest thermal stability, when the high pressure center has passed somewhat to the east of the location. A return to lower pressure, heralding a new storm, is accompanied by some decrease in pollution as the wind increases, but the pollution is not entirely alleviated until the next cold front passes. Therefore, in any weather situation, it is the high pressure area which is most troublesome, particularly in its rear portion.

The circulation of a high pressure area has a pronounced effect on thermal stability as follows. The surface winds on

the periphery of a high pressure area have components blowing outward from the center. This loss of air from the high pressure region by horizontal divergence is compensated by air settling vertically from above. As the air aloft slowly descends, it is subjected to a gradually increasing atmospheric pressure, since pressure is inversely related to height. This increase in pressure causes the air to become warmer by adiabatic compression at the rate of 5½° F. per 1,000 feet of settling. As the air becomes warmer it also becomes increasingly dry, since relative humidity varies inversely with temperature when there is no moisture added to or subtracted from the air. While the air is becoming warmer and drier aloft as it sinks, the surface air, which obviously cannot descend, undergoes no such changes. Consequently, the intervening layer of air becomes increasingly stable and eventually an inversion of temperature is formed, the air above being warmer and drier than that below. This inversion acts like a lid in preventing the upward diffusion of pollutants, which consequently accumulate in the cool damp air at the ground. This is the typical situation for smog, a combination of smoke and fog.

There are other factors which accentuate this pollution on the west side of a high pressure area. If the high pressure area is moving slowly, the stabilizing process lasts longer and gives a stronger, lower temperature inversion by the time the high pressure center has passed. The south winds on the west side of the high pressure center are stronger above the inversion than at the ground. Hence, above the inversion there is a horizontal transport of warmer air, which forms a greater temperature contrast with the stagnant cool air below. The presence of the heavy smog itself prevents sunshine from reaching the ground and thus keeps the surface air cool, which in turn prevents the vertical diffusion of the smog. This is a vicious circle. Also, the high pressure area with its dry air aloft produces no precipitation, which might otherwise wash some of the aerosols down to the ground.

The local terrain is an important pollution factor in a high pressure area because the winds are so light and the atmosphere is so stable that vertical motion of air over hills is suppressed and even prevented. The most unfavorable location for an industrial region is in a narrow small basin or valley flanked by ridges with steep slopes. Such was the case at Donora, Pa.; Liege, Belgium; and Trail, British Columbia; which have had dangerous pollution.

The seasonal and diurnal effects on pollution are determined by the wind speeds and thermal stratification. The smoky season is from early fall to the middle of winter, when the atmosphere is cooling, particularly at the earth's surface. The lag in cooling aloft makes this period the most stable thermally. However, at this time the prevailing winds are increasing, due to increased storminess, and reach their maximum speeds during the late winter. Hence, the worst season for pollution is the fall, although under the proper weather conditions, pollution can occur at any time of year.

Even in the course of a single day, there may be pronounced changes in pollution. Most frequently, the highest concentrations occur between sunrise and noon for several reasons. The minimum temperature at the ground and, consequently, the greatest thermal stability usually occur at sunrise. Pollution that has been accumulating during the night reaches its maximum concentration not far above the average height of the stacks, from which effluents rise slightly, then level out. As the sun starts heating the ground during the morning, some vertical convection currents develop, which bring the concen-

trated pollution down to the ground from above. By afternoon, however, the thermal mixing has usually extended through a deep enough layer to dilute the pollution through diffusion. In exceptional cases where the pollution is very heavy near the ground at sunrise and low clouds or fog are present, the rising sun will heat the hillsides above the smog, but not the valleys. In such cases, the increasing stability will delay the maximum ground pollution from the morning to noon or even afternoon.

In coastal locations, a sea breeze may start blowing in the late morning. It arrives over a city as a shallow layer of cool air topped by a temperature inversion. Pollution in such air is heavy after passing over industrial sections. During the day, the sea breeze gets stronger and the cool air gets deeper, thus causing a considerable decrease in pollution. The worst pollution occurs just as the sea breeze arrives. Consequently, the time of maximum pollution occurs later at points farther from the coast. This effect has been noted with eye irritation in Los Angeles.[5]

Sunshine produces photochemical effects, such as the formation of the irritant ozone. Frequently, visibility will undergo a sudden decrease right after sunrise. This may be partly optical in that there is more light to be scattered. This shows that visibility changes are not entirely due to changes in pollution.

Finally, many industrial plants do not operate at night, but start in the morning. The increase in the number of pollution sources undoubtedly helps to increase late morning pollution. This effect is quantitatively significant because pollution is noticeably less intense on Sundays than on weekdays, on the average. This suggests the desirability of curtailing plant operations during periods of exceptionally heavy pollution.

In conclusion, as the relationships between industrial hygiene and meteorology are rather involved, this paper has presented theories in a qualitative sense without giving numerical measurements. The quantitative significance of these relationships should be determined by gathering and correlating long records of industrial health and weather.

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Medical Care Insurance: Lessons from Voluntary and Compulsory Plans

Adequacy of Financing * †

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ONE needs no special knowledge of world experience to appreciate that financing has played—and will play—an important role in determining the strengths and the weaknesses, the successes and the failures, of medical care insurance. This applies equally to voluntary and compulsory insurance, at home and abroad.

As we study the past for its lessons, let us make every possible effort to observe and evaluate financial experience with due regard for the characteristics of the systems and for the circumstances to which that experience applies. This caution is elementary; but it deserves mention because American writings on this subject are already abundantly rich in confusion.

Adequacy of financing focuses, of course, on having enough money for the essential purposes of the insurance system. But what is enough depends on what kind of a system of medical care insurance is being examined or proposed.

The benefits of medical care insurance, voluntary or compulsory, range from only limited hospitalization or general practitioner service up to the most comprehensive services that can be provided for large numbers of persons. Despite the present diversity in benefits and, correspondingly, in costs, there has been a plainly evident, long-range world trend for benefits to become progressively more and more comprehensive. This trend reflects the increasing complexity of medical care, more adequate resources to provide services, greater popular willingness to spend for medical care, and planned extension of benefits in stages. Diversity in the *number* and *scope* of benefits must be taken into account in evaluating costs and adequacy of finances.

Diversity in the *sources* of funds and *method* of financing multiplies the difficulties of study and evaluation. There are voluntary plans in which the covered persons pay the whole contributions, and others in which their employers share in the premiums or even pay the whole cost. Among 39 compulsory systems in operation throughout the world, covered persons pay contributions in 31; their employers in 37; and government in 25. Government contributions from general revenue or earmarked tax range from a small proportion up to the total cost.[1]

CRITERIA OF ADEQUACY

Beyond these general remarks, I suggest that we should be guided on the

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subject of financing by five propositions which, I believe, ought to be generally acceptable. The first two are so closely interrelated that I deal with them simultaneously.

1. *The financial resources of the insurance system should make possible fair payments to those who provide services.*
2. *The finances should support and progressively encourage high quality of care.*

An insurance system cannot long endure and be effective if it fails to meet these criteria. Adequacy of payment to those who provide service does not of itself guarantee quality; but inadequacy of payment brings deterioration.

Apart from cases due to the low economic capacity of whole nations, two reasons—singly or together—are prominent in explaining instances of inadequate payments: excessively low income limits on the covered population; and flat or uniform insurance premiums.[2]

If financing relies heavily on contributions from the covered workers, the contribution rates or amounts must be geared to what those workers can pay. If the covered population is limited to low income levels, the aggregate contributions will be small. Relatively small income to the insurance fund inevitably means that there will be only small amounts to pay for benefits, unless the system is heavily subsidized by payments from employers or government, or from both.

If compulsory insurance relies on flat contributions, the premium amount may not exceed what the *poorest* among the insured can afford to pay. The payments to those who provide services must then inevitably be at low rates. If voluntary insurance uses flat premiums, similarly it can avoid low payments for services only by a narrow coverage that avoids the low or lowest income groups; if it seeks or achieves broad coverage, it is inevitably confronted with inadequate finances.

The interests of neither the physicians and hospitals nor of the public are well served by low income limits on coverage or by flat contributions. The bad effects result in inequitable payments. Eventually, the effects are also adverse for quality of care, because inadequate insurance payments do not encourage good care, and because with inadequate insurance resources there are no funds to support specific measures for progressive improvement of service.

Such weaknesses of financing had their roots in the historical fact that voluntary health insurance started a long time ago for people with small earnings and almost no other resources. The early systems of compulsory insurance inherited this pattern and were plagued by meager financing. Gradually, the compulsory systems raised the income limits, and some abolished them altogether.[2] Flat contributions have also been going into the discard among compulsory systems; only 6 of the 39 systems operating throughout the world still have them.[1]

Adequacy in contributory financing demands broad economic coverage of the population, and graduated contributions. With a trend in these directions among compulsory systems, many have been able to achieve or approach comprehensive benefits for broad coverage, pay fair rates for services, and still meet the increased costs. But these have not been the trends among voluntary insurance plans like those which have had large growth in the United States. A few consumer or coöperative plans have been able to use graduated contributions from insured persons, probably because substantial subsidy from employers moderates the resulting variations in premiums. But these are exceptions to the general rule that voluntary insurance uses flat premiums.[3] They are forced to this practice; where enrollment is voluntary, they

cannot sell the same contract at different prices. As a result, if the flat premium is small and low income groups can afford it, benefits must be of limited kinds or restricted scope, or both; or payments for services must be held at low levels; or the overall value of the benefits as protection against total medical costs must be reduced through "fine print" limitations; or combinations of all three of these devices must be used to preserve financial balance. If the flat premium is larger, so that the benefits can be more comprehensive and the payments for services more adequate, low income groups cannot afford to pay it and coverage cannot be broad.

3. *The method of financing should assure financial stability and flexibility*

Medical care insurance has generally been financially stable and solvent, though the voluntary plans have had more trying times than the compulsory systems.[4]

Financial stability has resulted because the amount and cost of benefit do not ordinarily change greatly within short periods of time; because such costs can be anticipated reliably, especially after the introductory years; and because this kind of insurance uses current-cost financing. Health insurance finance generally relies on reserves only for unusual expenses, and to minimize the need to revise contributions or rates of payment for services. When small contingent reserves are not enough, revision is necessary—and this is readily possible because the insurance contract is on an annual basis. Unlike old-age insurance, health insurance does not rely on reserve financing, with the attendant danger that inflation may reduce or even wipe out the resources.

The compulsory systems have been notable for their stability and flexibility. They have weathered crises of war and devastation, economic collapse, and ruinous inflation. Compulsory coverage protected them against adverse individual selection of risk, especially in times of economic down-turn. Graduation of contributions according to earnings provided "built-in" adjustment of income to cost, because a premium fixed as a percentage of earnings changes automatically as earnings rise or fall, and yet stays in proportion. And periodic adjustment of rates of payment assured that providers of service shared in the prosperity and poverty of the people they served.

Voluntary plans have had more trouble. Especially in times of rising price levels, they have had to proceed hesitantly in adjusting flat premiums upward—lest their financial difficulties be worsened by decline of coverage and selective loss of the "good" risks. In the alternative, they have often preserved solvency by reducing payments to providers, or by limiting the benefits and stiffening the tests of eligibility—thus conserving coverage at the expense of protection against total medical costs.

Employer-sharing of contributions does not greatly affect the long-term stability and flexibility of compulsory systems, especially those with broad coverage. The economic capacity of employers is not fundamentally different from that of their employees. In voluntary plans, reliance on employer contributions gives stability or exaggerates instability, depending on the number and other characteristics of the employers who subscribe.

Government contributions are also uneven in their effects, having to keep pace with employment, price and income levels. Thus, if government contribution is a large proportion of total financing, it introduces the periodic risk that in time of adversity the scope of benefit will be reduced, or that eligibility will be shifted from insurance to a means test. Most compulsory systems, except those in the communist countries, have therefore relied on general revenues as

a supplement to, but not as a substitute for, earmarked contributions from the insured people.

When voluntary insurance has had to rely heavily on government subsidy it has usually had to accept incorporation into a public system. It is safe to expect that current proposals in Congress for large public subsidy without public controls will not be acceptable.

4. *The method of financing should adjust the costs to ability-to-pay*

The cost of a broad-coverage system of insurance must obviously be within the means of the national economy; and the cost of a limited-coverage system must be in accord with the capacity of the group served or there must be subsidy from non-covered groups. But the costs must also be budgetable by the individual contributors.

Compulsory insurance has generally adapted the costs to the population through graduation of contributions and pooling of risks. The premium is usually fixed as a percentage of earnings, or its amount is adjusted for a series of wage classes. The pooling of risk is carried to its logical social conclusion when coverage includes the bad as well as the good risks, and the premium rates are the same for both. Thus, medical benefits become available according to need for medical care. This is social insurance and not merely insurance.[2]

Voluntary insurance, on the contrary, is generally bound not only to flat contributions—with the consequences of limited coverage, inadequate benefits, or both, which have already been noted, but also to partial or limited pooling of risk. Since individuals may decide for themselves whether or not to enroll in a voluntary insurance plan, they can practise self-selection according to their expected need for service. The voluntary insurance plan must then expect a heavy loading of bad risks, must raise the premiums, and forfeit coverage; or, if it would keep its premium low, it must deny insurance to the bad risks—keeping out by one device or another those who are most in need of insurance protection—like the older persons and those with already-developed medical needs. Consequently, voluntary insurance cannot achieve both broad coverage and comprehensive benefits through premiums adjusted to ability-to-pay. If it is to reach those goals, it must have subsidy—either from employers who pass the cost of subsidy for their employees on to consumers generally, or from government which passes the cost for the subsidized coverage on to all tax payers.

5. *The financial arrangements should be economical and efficient*

Insurance plans are either public or quasi-public undertakings. The public therefore has a right to expect both economy and efficiency from them.

The administration of medical care insurance has four main parts. Two of these, concerned with office management and with arrangement and payment for benefits, are fundamentally the same in voluntary and compulsory systems of comparable scope; and, with respect to these two parts, experience shows no basic advantage to the one or other type of system except that a comprehensive compulsory system is much more economical than multiple fractional voluntary plans. The same may be said of a third function, collection of contributions, except that where these insurance funds are collected along with other social insurance contributions the cost for each insurance is reduced, so that compulsory insurance is still more economical. On the fourth, the cost of acquiring members, the compulsory systems have a large and very important advantage; their coverage is achieved and held by decision of law, and it does not have to be bought initially, and then again and again, through selling cam-

paigns, salaried agents, commission brokers, employer contracts, etc.

With no major administrative economies on the side of the voluntary plans, and with clear advantages for the compulsory systems, the facts of record are not surprising. Compulsory insurance systems that are administered through direct-line administration generally have total administrative costs in the range of 5–10 per cent of income or expenditures.[2] (The British national health insurance of 1911–1948, with an overhead of 15–20 per cent, was one of the notable exceptions among the large systems. It has been replaced by a system operating with an overhead of 2½–3 per cent.[5]) Voluntary insurance records show overhead costs ranging from a few per cent up to 33 per cent and even more. In the United States, Blue Cross, Blue Shield, and related plans use up about 16 per cent of premiums in overhead (i.e., operating costs and reserves), with a range of about 8–25 per cent; insurance companies selling group contracts, about 20–30 per cent, and those selling individual policies about 50–70 per cent.[6]

The proposal for government subsidy to augment the reach of nonprofit voluntary insurance in the United States does not rest on any evidence that such a program would or could be as efficient or economical as an alternative to a compulsory system. Indeed, one of its leading proponents defends such subsidy as an additional price we ought to be willing to pay for preserving in this field what he thinks should and still would be a private enterprise.[7]

FINANCING MEDICAL-CARE INSURANCE FOR THE UNITED STATES

In light of these observations, how much should we expect to spend for medical care insurance in the United States and how should we finance the cost? Before answering, let me develop a benchmark and some yardsticks.

In 1949, when our national income was about $217 billion and our gross national product about $256 billion, our total civilian health and medical expenditures were about $10.6 billion, equalling $72 per person, about 5 per cent of national income, and about 4 per cent of gross national product. Of these expenditures, about $2.7 billion were made through tax funds by federal, state and local governments. Private expenditures were about $7.9 billion, or about $54 per person. Thus, we are already spending large sums, publicly and privately, for health and medical services.[8]

In the same year, we paid about $1 billion in premiums for such voluntary medical care insurance as we had, and received in return benefits and indemnities amounting to about $0.7 billion. We know that many millions of persons hold these insurance contracts of many kinds, but we have no reliable unduplicated count of the numbers. The value of the insurance to the public is great; but note that the aggregate benefits—$0.7 billion—amount to only about 11 per cent of the $7.9 billion of total private expenditures for medical care.[6]

A system of national medical care insurance providing comprehensive physicians' and hospital services and limited dental care, home nursing, and expensive supplies, and covering about 85 per cent of the population would involve costs (at 1948 price and income levels) of about $4.7 billion in each of the first years. About $6.3 billion per year would be required a decade or so later, when the supply of practitioners, hospitals, and other resources, and the demand for service have increased. These costs would amount to about 2 per cent of national income at first and about 3 per cent later.[8]

These costs are within the framework of what we already spend. They cannot be far wrong, because they are computed from what we have and may expect to have in numbers of hospital beds and

practitioners, and from estimates of total hospital costs and of fair total annual incomes to practitioners. The figures allow for expansion of services, for increased cost of hospital care, and for increased incomes for practitioners.[9]

These estimates are *not* calculated by applying to the whole population the hospitalization rates and the medical costs for sick veterans,[10] and they are *not* calculated by assuming hypothetical standards of good medical care and equally unrealistic numbers of practitioners and hospitals—methods used by others to produce fantastic costs for national compulsory insurance.[11]

Our cost estimates assume that the amounts paid for insurance benefits shall not be dependent on the methods of payment chosen by those who provide the services. Also, to the maximum extent that the benefits can be comprehensive, these figures apply to service benefits, not to partial indemnity payments or—so-called "co-insurance"—both of which reduce the cost of insurance but not of medical care, retain financial barriers, and provide only partial protection. And our estimates allow for the insurance system to assume a fair share of support for professional education, research, and expansion of resources for service.

Our estimates also assume that the funds would be raised nationally, through the financial mechanism we already have for national old-age and survivors insurance. The major portion would be derived from equally divided, graduated contributions paid by gainfully occupied persons and their employers; a minor portion would be from national tax funds. They assume that expenditures would be made through allocations to the states in accordance with expected costs, with public control and public accounting of the funds.[9]

CONCLUSION

It is generally agreed that the people of the United States need and want medical care insurance—of some kind. I have proceeded on four additional premises. People want medical care insurance for all self-supporting families to whom the costs of medical care are or may be burdensome, and not merely for the middle-income third of the population. They want comprehensive protection against all medical costs that may be burdensome, and not merely partial protection against such part of those costs as some particular group of providers of service or some insurance companies may be interested in providing them. They want adequate financing, sufficient to support high quality of care. And they want to pay adequately for the services they receive.

Can these national wants be met by further expansions of voluntary insurance? Or must we have compulsory insurance?

With respect to adequacy of financing, the choice is clear. And all else about any insurance program is tentative until its financing is solved.

The financial history of medical care insurance testifies that voluntary insurance was superseded in other countries by compulsory insurance mainly or largely because voluntary plans cannot finance a nation's need. The last twenty years of intensive trial and substantial failure to achieve comprehensive insurance protection in the United States through voluntary insurance confirms this lesson from history. Voluntary insurance in the United States is repeating many or most of the worst financial mistakes of health insurance history. It cannot avoid them unless it seeks subsidy and surrenders some of its voluntary features, because inadequate financing is inherent and inevitable in voluntary plans.

Compulsory insurance can be adequately financed. It can have broad coverage, provide comprehensive benefits, and protect against most of the

burdensome costs of medical care. It can have the funds to pay adequately for the services that are needed. It can support care of high quality, and can encourage further progress in research and professional education.

We can afford the cost of comprehensive compulsory insurance. Both as a nation and as individual contributors, its finances would be within our means. It would be an investment and not merely a cost, because it would make large contributions to personal health and to productivity, security, and well-being.

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Defense Against Biological Warfare

What You Should Know About Biological Warfare is a pamphlet prepared by the federal Civil Defense Administration for the man on the street. The purpose of the booklet is to give a very general idea of what BW might consist of, what its limitations are, and how it can be combated. Prime responsibility for defensive measures is placed on "the health service divisions of local civil defense organizations, working with peacetime health safety systems." This should be of use to public health personnel for distribution to civilian groups. Available from Supt. of Documents, Washington 25, D. C., 10¢ a copy.

Medical Care Insurance: Lessons from Voluntary and Compulsory Plans

Methods and Rates of Payment * †

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FIFTEEN minutes is too short a period in which to discuss the hundreds of plans for the dozens of types of health insurance carried by individuals and groups. The whole gamut of experience with compulsory and voluntary plans, at home and abroad, could be included without exhausting the subject assigned to me. I have chosen to use my time to discuss the pattern of voluntary insurance which has evolved in this country to meet the costs of illness. The only exception will be a reference to state compulsory disability programs—all but one of which utilize insurance company plans.

Methods and rates of payment are, of course, a part of the general problem of financing the cost of illness. The American people have, since 1929, consistently spent about 4 per cent of their consumer budget for medical care. The funds to pay for that care have come from current earnings, savings, loans, and, more rarely in the earlier years, from insurance. The problem today is still one of making it *possible* for the average American family to budget its medical expenditures. There also remains the very important problem of *educating* the family to include voluntary health insurance in its family budget.

Before discussing the general problem of budgeting for medical care, I would like to state the problem of indigent care. Traditionally the care of the needy has been the responsibility of local communities. In recent years the trend has been for states to assume some responsibility for assuring minimum health services in all communities within the state. Even more recently, the federal government has assumed some responsibility for individuals in certain categories—for example, crippled children and the blind. Since the fundamental administrative problem of indigent care is always that of determining eligibility, the final responsibility should remain in local communities where the individuals are known. Financial assistance should not become the province of a distant and relatively disinterested bureaucracy.

Another special problem sometimes set up by analysts of the medical care situation is that of providing medical care for the aged. The basic problem for the old is income. Pensions, savings, and life insurance can make a large majority of old people independent and, in most instances, able to pay for their own medical care without recourse to public aid. That is, they can unless inflation wipes out their savings. With the major expenditures for raising children

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† The views expressed in this paper are the author's and not necessarily those of the American Medical Association.

and buying household equipment behind them, and with a minimum of community assistance available for special cases, older people with incomes do not pose special problems of payment for medical care.

For those in the working period of life, postpayment of medical bills as they came along was the customary procedure until the 1930's. Sicknesses tended to extend over a long enough period of time for doctors' bills to pose no special problem for the average family. Hospital bills were usually incurred only for very acute conditions. And in the event of a really large bill, the patient could arrange with the doctor (and the hospital) to pay it off gradually; most physicians today will accept installment payments for services rendered. But today sudden bills for hospital care, drugs, and complicated operations may sometimes swamp a family; at least the dollar cost in an inflationary period may be astounding. It has now become imperative for families—especially middle and lower income families—to protect themselves against crippling medical and hospital bills by means of insurance.

KINDS OF SICKNESS INSURANCE

Two problems arise when sickness strikes: loss of income, and costs of medical and perhaps hospital care. Insurance against loss of income became a felt need at about the middle of the 19th century as factory and wage systems became dominant and the individual no longer had the closeness to the soil which makes for a large degree of self-sufficiency. Many of the larger industrial companies began to establish employee benefit plans, usually with contributions by both employer and employee. Labor unions and fraternal organizations also set up sick-benefit programs for their members. Private insurance companies issue various types of disability insurance to groups and individuals. Paid sick leave maintains the incomes of others. By December 31, 1949, over 34,136,000 persons were protected against loss of income by some kind of insurance.[1]

Five states (Rhode Island, California, New Jersey, New York, and Washington) have enacted compulsory disability benefit programs. These state plans were established first in the three states (Rhode Island, California, and New Jersey) which had access to so-called "surplus" funds paid by employees into the unemployment compensation fund. With this surplus simply diverted to the cash sickness fund, the new benefits could be paid without any additional cost to the worker—a political plum not long ignored. About 5,400,000 persons are covered by these plans in Rhode Island, California, and New Jersey, of which at least 2,900,000 are also covered to some degree by voluntary plans.[2] The New York plan went into effect only in July, 1950, and the Washington plan is to be voted on by the people of Washington this month (November, 1950). It is significant that the other states have not adopted the Rhode Island monopolistic cash sickness program. Its system pays smaller benefits per dollar of contribution than the other plans. The brief experience of the state plans—especially those utilizing customary insurance procedures—may be insufficient to demonstrate whether the state is too large and complex an area for the successful operation of this type of insurance.

Bills to establish similar programs in other states have been introduced every year for the past eight years. In the states in which the law has already been passed there is tremendous pressure to increase weekly benefits, reduce the waiting period, add hospitalization, etc. There is pressure, too, on doctors in those states to strain the meaning of the word "disability." They are caught between pressure from government officials to cut off certification quickly and

promptly, and pressure from their patients who wish to prolong the period of disability.

With insurance "all bought and paid for" the temptation to use it mounts with each passing year. In Rhode Island the law has resulted in increasing absenteeism [3] and a pattern of suddenly increased claims at the beginning of each benefit year.[4] Company plans and fraternal groups have been able to keep their programs under control by virtue of direct personal pressure on claimants, but insurance companies have experienced some of the difficulties which arise when the system becomes more impersonal. Claim rates for life insurance companies on their group disability contracts increased from 50 to 100 per cent between 1929 and 1933,[5] illustrating forcefully that to a considerable extent disability is a business cycle risk rather than an insurance risk.

For a number of years insurance companies have offered indemnity policies which pay, as a general rule, a specified amount per day for hospital room and board, a multiple of that amount for extra charges, and specified cash benefits in payment for stated surgical or medical services. Other organizations have provided various types of protection to special groups. In most cases these latter organizations have paid indemnities either to the individual receiving the service or directly to the person or institution providing the service.

In the early 1930's a flood of hospital and medical care plans appeared. With hospital income from endowments and voluntary contributions decreased by about two-thirds, the charity load was increased fourfold, and huge obligations growing out of capital investments or fixed costs remained unmet.[6] There was a great need for some means of making medical care available to persons of limited means and assuring an income for those rendering the service. Many of the earlier plans were organized on very precarious foundations and gave little assurance that they would be able to meet their claims. Some of the plans were based on sound financial principles, and provided the means of paying for a high quality of medical care. Like other social institutions, these plans have gradually accumulated experience and can now offer the American people a very large degree of protection against the costs of severe illness. I will give more details on the extent of coverage of medical bills later.

Among those early plans were two types which, after the first few trying years, have attained positions of prominence in the field of health insurance. Blue Cross plans for hospital care both assure the patient of the means to pay for hospital care and provide the hospitals with a relatively sure and stable source of income. The Blue Cross plans operate as non-profit agencies offering service benefits to subscribers and paying hospitals on a contract basis. Blue Shield plans for surgical and medical care act as independent insuring agencies under the sponsorship of local or state medical societies. Some medical societies have supported medical plans offered by established insurance companies. Although payments for physicians' services are usually on an indemnity basis, 49 of 79 medical prepayment plans in the United States listed by the Council on Medical Service of the American Medical Association [7] provide service benefits to persons below income levels established by each plan. The very fact that these plans offering medical service benefits have the direct support of the physicians who render that service gives these plans a stability that no other plan can equal. For in most instances the doctors have pledged to prorate their fees, if necessary, in order that their plan shall remain financially solvent. With such a plan, economic adversity will not mean cutting service, for the physicians have ac-

cepted the risks of being reinsurers of their own plans.

COVERAGE OF COSTS OF SICKNESS

Because of the nation-wide distribution of its members, data on claims and coverage collected by the national organizations for Blue Cross and Blue Shield may be of interest as examples of the job that voluntary insurance is doing to meet the costs of medical care. Blue Cross and Blue Shield are used because their statistical data are readily available. What is true of these plans is also true of many other voluntary plans offered by insurance companies, labor unions, and others.

What is the cost of a Blue Cross-Blue Shield contract? [8] The family subscriber in two out of three plans paid $6.07 per month or less in 1949. This means that for 20 cents a day—less than the price of a pack of cigarettes a day—a family can be insured against severe medical bills. The lower eight-ninths of the plans cost $6.93 or less a month. (The highest monthly premium is $8.25; this particular contract includes several special features.) While benefits under these plans vary widely, it is to be expected that time and experimentation will enable the plans to cover even more of the costs of illness and provide a range of coverages which can be tailor-made to fit the needs and desires of various economic groups.

But meanwhile what is voluntary insurance doing today? How much does a patient who has joined Blue Cross have to pay on his hospital bill? Many opponents of voluntary health insurance have charged that such plans fall far short of covering the costs of illness to the subscriber. An analysis of statistics from the Blue Cross-Blue Shield Commissions and the United States Department of Commerce, however, tends to disprove this argument.[9] It was found that the amount paid by Blue Cross in 1948 was 82 per cent—or four-fifths—of the proportionate share of the nation's hospital bill borne by the average Blue Cross subscriber. This percentage was necessarily a rough approximation. Yet an unpublished study by the national Blue Cross Commission of representative Blue Cross plans across the country shows that during the first six months of 1950 Blue Cross paid 82.2 per cent of their subscribers' total hospital bills.[10] The additional 18 per cent is probably accounted for in the additional cost of private rooms which some patients require, other charges for extra and special services not covered in the subscriber's contract, and the uncovered part of hospital care during an exceptionally long illness.

Using the same kind of analysis it was found that Blue Shield paid 65 per cent —or one-half to three-fifths—of its subscribers' total doctor bills. While Blue Cross pays benefits from the first day of hospitalization, Blue Shield does not usually pay for the first few home and office calls, if any. Nevertheless these calls become part of the total bill for physicians' services incurred by Blue Shield subscribers. Therefore the percentage of the total bill for physicians' services paid by Blue Shield is lower than the percentage of the hospital bill paid by Blue Cross. Unfortunately it is impossible to obtain separate figures showing how much was paid to physicians for major illnesses, which are a serious threat to the family budget, and what part of the estimated total of physicians' bills were for minor illnesses which arise in any family, which require only a small amount of medical attention, and which represent only a moderate cost. Nor are data available showing the total amounts paid to physicians for services rendered while the patient is in the hospital; this in-hospital service is precisely what most Blue Shield plans cover. It is probable, however, that the percentage of bills for major illness paid by Blue Shield is far greater than 65 per

cent. (See also Theodore Wiprud and Isadore Altman, *J.A.M.A.* 144, 14:835–839 (Nov. 4), 1950.)

These percentages are averages. Many subscribers are reimbursed 100 per cent. Some, especially those suffering unusually prolonged and serious illness, receive less than the average reimbursement. Also the percentage for the typical low-income patient is above the average and for the typical upper-income patient below the average. There will be few, if any, hospital bills to be met by most hospitalized patients in the low-income group who accept the accommodations provided by their Blue Cross contracts. However, the average hospital patient in the upper-income group—the group which often demands more elaborate accommodations than those provided in the Blue Cross contract—is reimbursed for less than the average percentage. This situation is far more pronounced for Blue Shield subscribers. Most low-income subscribers to Blue Shield plans are charged small, if any, additional fees by physicians (for in-hospital services) over and above the amount provided by the Blue Shield contract. Upper-income patients receive less than the average percentage of reimbursement.

FUTURE NEEDS

I believe that most students of insurance would argue that insurance should not be made to pay for minor losses—especially those which are almost certain to occur with a fair degree of regularity. It is almost certain that any given family needs the services of a physician three or four times a year. If these calls are insured, the premium in such cases must be large enough to cover the cost of the initial visits which the policy holder is almost certain to require each year, plus the cost of operating the plan. The policy holder is, therefore, actually paying more for these initial visits than he would pay if he dealt directly with his physician for these minor needs. As a matter of fact, it costs just as much to process a claim of $10 as one of $200. Voluntary insurance plans have been able to become firmly established as they have learned through experience to cover only illnesses which would impose a heavy burden on the family. Where home and office calls are covered, the first two or three visits for each illness are usually excluded in order to preserve the resources of the plan for more serious illness; a dollar deductible feature in the coverage of home and office calls might be helpful.

Although voluntary health insurance probably should not be made to cover minor losses, there is a very definite need to extend existing plans to cover the rare "catastrophic" illness. The extent to which some plans have already met this need may be seen by a look at the largest claims paid by Blue Cross and Blue Shield in 1949. The largest single claim paid last year by Blue Cross in the United States[10] was paid for a patient in Dayton, Ohio, a subscriber to the Cincinnati Blue Cross plan. Treatment for subacute bacterial endocarditis complicated by rheumatic heart disease required a tremendous quantity of drugs, penicillin, streptomycin, and aureomycin. The claim was $6,273.71. Blue Cross paid $5,578.80. The largest payment by Blue Shield,[11] as far as I could discover, was for a man in Victorville, Calif., covered by California Physicians' Service. He had suffered third degree burns and required extensive treatment and skin grafting. His doctors' bills of $1,771 were paid in full except for $40 to a non-Blue Shield physician. Surely these cases of catastrophic loss were adequately covered!

Experimentation with plans to meet the need for "catastrophic" coverage is now in progress.[7] Insurance companies now offer "polio" policies paying up to $5,000 per person. The California Physicians' Service has offered a "catastrophic" rider to certain holders of their

regular contract; it provides payment for medical care resulting from 23 named diseases, which usually require prolonged and costly treatment, for a period up to two years or up to $5,000, whichever shall occur first. Participating physicians in the California Physicians' Service have agreed to underwrite this experiment. A few insurance companies are experimenting in underwriting catastrophic medical expenses on a deductible basis. In this type of insurance, the policy holder is insured against all costs of care which exceed a deductible maximum and up to a predetermined maximum. For example the policy might provide benefits in case medical or hospital costs or both exceed $300, up to a maximum of $3,000. One experiment in this field combines the deductible feature with co-insurance. After the policy holder pays out the deductible amount for health care, the insurance company underwrites 75 per cent of the excess while the insured pays 25 per cent of the costs in excess of the deductible amount. By being relieved from administering small claims, underwriters are in a position to issue true catastrophic coverage at a much more attractive premium.

Another type of health insurance which I think should receive consideration is an indemnity policy which a wage earner could pay for during his working period of life and which after age 65 would provide a paid up "medical care annuity" for the rest of his life. The indemnity feature would be necessary because the risk of illness in old age cannot be predicted 20 to 50 years earlier with certainty, and a service type policy might commit the insuring agency to more than it could pay. The paid-up feature is especially important for this group whose income is in most cases fixed at a minimum level. It can be argued, however, that the basic problem is to provide substantial income for the retired years.

I think that voluntary health insurance has made truly remarkable progress. As of December 31, 1949, over 34,136,000 persons were protected against loss of income, 66,044,000 against hospital expense, 41,143,000 against surgical expense, and 16,862,000 against medical expense.[1] The rapid rate of growth of these coverages in recent years is indicated by the fact that about 89 per cent of the hospital expense coverage and nearly all of the surgical and medical expense coverage under Blue Cross, Blue Shield, and other group insurance has been added during the past ten years. Through constant experimentation these plans are seeking to meet the need for coverage of those additional diagnostic procedures which are insurable. One of the most important types of coverage needed is for certain diagnostic procedures. Most Blue Cross plans now cover some diagnostic procedures in the hospital, and some Blue Shield plans are experimenting with similar coverage in and out of the hospital. While increasing benefits and coverages are likely under voluntary insurance plans, it should be noted that under socialized medicine schemes in other nations it has become necessary to curtail the benefits originally promised. The government schemes also are mounting steadily in cost to the taxpayers. Voluntary plans are defraying an important part of the costs of medical care to subscribers and eventually can be expected to pay even more of the bills of more and more of our total population.

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Mental Disease in Old Age

The New York State Mental Health Commission and the Syracuse Council of Social Agencies through its Council on Aging have undertaken an intensive research program to discover what conditions are associated with mental disease among the aged. Experiences of older people in Onondaga County and the forces, including social and economic, influencing their mental health will be studied. There will be a planned experimental program of services and an evaluation of its effect on the incidence of mental diseases. Among the purposes of this pilot experiment is to obtain authoritative data on which a master mental health plan for communities throughout the state may be built.

The Mental Health Commission, created by the Legislature in 1949, is made up of the state commissioners of health, social welfare, education, and correction and headed by the Commissioner of Mental Hygiene, Newton Bigelow, M.D. Its executive director is Ernest M. Gruenberg, M.D.

Achievement Tests in Personnel Selection*

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THE term "achievement test" refers to two somewhat different types of measures: the subject-matter test and the proficiency test. Subject-matter tests are devices to estimate the amount of information that has been acquired about a subject, often in terms of the content of specific courses. An attempt is made either to obtain a sample of the information in a defined area so as to estimate the degree to which individuals taking the test have mastered the area or to rank them in order of their acquaintance with the field. In proficiency measurement, the emphasis is on the assessment of skills, such as typing, stenography, or clerical work, which have been acquired as the result of training. This type of achievement test is essentially a job sample of the work to be performed. The aims of the examination are to determine the level of skill or proficiency in order to establish whether the individuals tested are competent to perform the activity and to rank them in order of ability to do the job.

Both types of achievement measures are actually found in civil service examinations for the selection of workers in the field of public health. The subject-matter type of achievement test tends to be used more with workers on the professional levels, whereas proficiency measures are used more frequently with the candidates for non-professional positions. The reasons for this are easy to understand. In part, it is a reflection of our lack of knowledge of how to build tests and partly it comes about through certain limitations of the testing situation itself.

Within the typical testing situation, it is possible to approximate the working conditions of clerks, typists, and stenographers. Candidates can be provided with the same type of equipment that would be required at work. Miniature job situations can be established under such controlled conditions that it is relatively easy to arrive at scores which will rank candidates in order of their ability to perform at least a fair proportion of the activities required when they are later employed. Under such circumstances proficiency measurement can be extremely useful in the selection of non-professional personnel.

With the professional worker, on the other hand, the test situation does not permit a neat reproduction of the work situation. The professional worker draws upon his general background in formulating plans, in making decisions, and in the coördination of efforts of superiors, associates, and subordinates. A much larger proportion of the success of the professional worker involves the ability to handle human relations than is the case with the clerk or typist. While certain experimental studies have been made on measuring abilities required in social situations, our methodology in this area is largely incomplete. The informational background required of the professional can be measured to some degree and is certainly useful in selection pro-

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grams. However, we must not overlook the fact that at the present time a much smaller percentage of the skills required of a professional can be effectively measured than is the case with workers in more routine positions.

The two types of achievement measurement, measures of knowledge and measures of skill, do not always overlap. It can be stated that skill implies knowledge but that knowledge does not always imply skill. A good secretary must not only have skill in stenography and typing but also knowledge of spelling, grammar, and general information. On the other hand, a candidate for a professional position may have a wide range of information on, let us say, the causes of epidemics, without having those social and administrative skills essential to setting up an appropriate program of action to prevent them. He may lack skill in persuading others as to the correctness of his views or in causing his associates to take action.

When attempts are made to assess the social skills required for a professional position, we generally resort to interviews, letters of recommendation, and appraisal of success during training or in previous positions where these skills may have been demonstrated. While these makeshifts are undoubtedly of some value, our selection of professional workers would be greatly improved if adequate proficiency measures of the ability to perform at a high level could be developed.

At this point we should consider whether there is any true distinction between achievement measures and aptitude tests. The very same algebra test can be used as an achievement measure in a high school course in mathematics and as an aptitude test for the selection of engineering students. In the first case, we are attempting to appraise what has been acquired as a result of specific instruction, and in the other case how likely the student is to succeed at tasks far more difficult and perhaps quite different from his high school mathematics courses.

This interchangeability, under some conditions, of aptitude and achievement material makes it necessary to agree to some working propositions if we are to confine our discussion to those aspects of achievement testing which are useful in personnel selection.

1. In personnel selection we are more interested in predicting what the individual will do in the future than we are in ascertaining the specific effect of a particular set of experiences in the past. Hence in all cases, we are using achievement tests as predictive instruments, that is, the way aptitude tests are generally used.

2. Achievement-type items are generally regarded as more acceptable to candidates than material which is frankly of the aptitude type. Material which theoretically, at least, might have been studied in school or learned in a qualifying job seems a natural part of an examination for a new position. Many candidates regard items for which they have had no opportunity to study as essentially unfair.

3. Job sample tests, that is, achievement tests which actually require performance similar to the job, have an essentially good public acceptance. Another great advantage of the proficiency test, where it is applicable and where adequate measures have been developed, is that it is more predictive than other types of testing. The closer the test situation involves the actual skills required by the job, the higher the correlations are apt to be between the test scores and measures of job success.

With these definitions and limitations in mind, let us proceed to consider the best strategy to use in devising appropriate achievement-type items for positions, especially at the professional level. It can be stated that the measurement of clerical, typing, and stenographic skills

is relatively mature at this time and in general is accomplished satisfactorily.

With professional level positions, the techniques available are inadequate. In any specific situation, considerable effort is required to develop a test that is reasonably useful. We need good hypotheses as to how to measure the qualities which we know are essential for professional success. We just do not know how to measure originality, judgment in practical situations, emotional maturity, stamina under stress, drive, executive ability, and skill in handling human relations. In these areas a little progress has been reported but the answers as yet are far from clear-cut.

The first step in developing selection test material is a clear understanding of what we are attempting to predict, defined loosely as "success on the job." In certain routine positions, success on the job can be measured objectively and adequately. For example, the output of typists in some large agencies might be evaluated both quantitatively and qualitatively in such a way that their relative worth to the organization might adequately be ascertained. The higher we go in the professional scale the less objective become our appraisals of success. Is the most successful public health officer the one who writes the most letters, makes the most phone calls, conducts the greatest number of interviews, or prepares the longest annual report? Obviously not. Possibly we can approach the truth as to his success on the job by asking those who are in a position to know his work to evaluate him either informally or on some type of a rating scale. These evaluations have many pitfalls and the higher the position the greater the deficiencies of the method. Certainly we cannot hope to reduce the selection of high level personnel to a mechanical formula. Our personnel procedures can, however, help in a number of ways. First of all, we can use letters of recommendation, statements of training and experience, interviews, and aptitude and achievement measures to eliminate candidates who are definitely unsuited for positions for which they are applying. No matter how intelligent and learned a man who purports to be a surgeon may be, he is not permitted to operate until he has had certain qualifying experiences under professionally approved auspices. If a candidate for an accounting position has a police record he might well be advised to seek another type of employment. If an individual is applying for a position in which detailed knowledge of syphilology would obviously be of material assistance in making good decisions and he ranks toward the bottom of a group of candidates in this respect, it is appropriate to eliminate him from consideration. While we may not be able to find high correlations between such measures or estimates of candidates with success on the job, we can certainly take reasonable steps to eliminate the obviously unsuitable applicant from consideration.

In devising an achievement test for a selection program it is a first principle that the more clearly we can define its objectives the better the test will be. The first step, therefore, in any examining program is to reduce to writing the actual job requirements. A well written job description is often an important research project in itself. To obtain an adequate concept of what the job requires, it is often necessary to interview a number of individuals who do the work successfully, to observe them as they work so as to become familiar with their aims, methods and results; to talk with superiors, associates, and subordinates; to read the technical literature of the field; and sometimes to participate actively either in their training or in their activities. The higher the professional level of the position the harder it becomes for a technical job analyst or a test technician to obtain an adequate concept of what the work really entails.

It may be that the job descriptions have to be in large part the product of individuals actually engaged in the work.

A good job description is a source of hypotheses as to the traits and skills required for success. As indicated earlier, some of these traits and skills may be measurable by existing techniques while others are not. It is the responsibility of the test technician to review the job description with two aims in mind: (1) the development of a list of testable traits and skills that are involved in the position, and (2) an evaluation of their relative importance. At this point he is a scientist making deductions which later may be proved true or false. On the basis of these hypotheses he develops an examination plan as to the types of items which are to be constructed and the relative numbers of each type. Sometimes this plan is detailed to the point that there is a rationale for each item; that is to say, a list of items is constructed, each of which is designed to measure some specific aspect of the job.

Next comes the writing of the examination items. In some cases, individuals working in the position professionally may actually write items; in other cases the items are produced by test technicians, trained in the theory and practice of test construction. In all cases, however, the material needs to be reviewed by professional consultants as to its technical correctness and applicability. These consultants need to have great insight both into the nature of the position and into the factors which make for success on examination items. Unfortunately, it is much easier to write ambiguous, misleading test items than it is to write good ones. The amateur item writer may set up an item in which success comes only by chance or through processes unrelated to actual skill on the job. In the last two or three decades, however, considerable knowledge has been accumulated on differences between good items and poor items. Competent test technicians, working with qualified professional consultants, can generally produce test material which will be of material value in selecting workers on almost any level of competence.

The professional consultant can be expected not only to criticise items which are inadequate for one reason or another, but also to suggest items which need to be written. This combination of the technical skill of the test technician and the professional judgment of the expert consultant can result in reasonably useful selective measures, far better than mere evaluation of letters of references, statements of qualifications and review of professional contributions. Predictions suffer, of course, from the lack of good measures of job success and also from the incomplete coverage of the skills required in the job. These limitations, however, need not obscure the fact that considerable progress has been made toward a science of personnel selection. In none of the professions do we know all the answers. Recognition of the incompleteness of our knowledge is in itself a necessary prerequisite to further advance.

Ideally any test material developed for personnel selection should be tried out experimentally before it is applied for the purpose for which it was developed. In some large-scale and continuous selection programs, experimental material for the year to come is included in the test booklet of the current year. Such experimental test items can be evaluated for difficulty, for adequacy of the correct answer and the various decoys, and for relationship to success in training. This procedure has much to recommend it.

Another procedure is to try out material on groups of individuals currently employed. Here a number of difficulties present themselves: (1) the individuals concerned may have neither the time nor inclination to participate; (2) the

psychological nature of the test items may change considerably with experience on the job; and (3) the interpretation of the results of such studies is difficult. A more feasible procedure is often to try out the material on a sample of individuals who resemble the candidates eventually to be tested but who will not themselves be candidates. Valuable information about item difficulties and the consistency of the various subtests can be obtained and problems in test format and administration can be ironed out.

Once we have developed test material which we have agreed is to be used for the selection of professional workers a number of problems remain to be solved. How much time will candidates be allowed? How can we determine the passing point? How do we know that the test yields consistent results? How can we determine whether we are measuring something actually related to success on the job? What can we do in future examinations to improve our techniques?

The answer to the first question, namely, the time allowance is relatively simple. In jobs where speed of activity is important, speeded tests are often valuable. Speeded perceptual tests are useful in the selection of aircraft pilots; speeded clerical aptitude tests are useful in the selection of clerks. In most professional level positions, however, speed of work is generally not particularly important, since quality counts more. For predicting success in a higher level occupation, achievement test items should be difficult and time limits for groups of items generous. Accordingly in setting the time limits the best practice is to allow ample time for the vast majority of applicants to complete all items, with the limit imposed only to cut off the occasional straggler who might otherwise remain overtime in the examination room and thus try the patience of the test administrators. It is doubtful whether the extremely cautious and meticulous candidate who takes twice as long as his competitors would make an acceptable executive.

The passing point is a somewhat arbitrary matter and has to be settled from a number of considerations. If we are setting up a civil service register and have thirty times as many applicants as positions to be filled from the register, we may set our passing point rather high simply to give those who rank low on the scale no undue hope of an appointment. This situation obtains more in times of depression than in times of prosperity. When applicants are few and positions to be filled many, we should set our passing point where the obviously unfit will be eliminated and only the properly qualified accepted for further consideration. Sometimes legal requirements enter into the establishment of a passing point. In some jurisdictions the passing point is defined as 70. If this has to be interpreted as 70 per cent of the answers correct, the Merit System administrator has no choice. The only thing he can do is to prepare the material, through the selection of items of known difficulty, in such a way that the mark of 70 will be reached by some desired proportion of the applicants. In some Civil Service jurisdictions, it is possible to transmute gross scores, usually in number of items correct, into standard scores such that no individual will have a score above 100, and a predetermined percentage will have scores below 70. In such cases it is always advisable to be sure that the transmuted score is somewhat above the percentage raw score; otherwise candidates are less willing to accept statistical manipulation of the score. The experience from one examination can be applied to subsequent tests and a fairly useful and acceptable procedure can be worked out on a trial and error basis.

Eventually, passing points will be meaningful critical scores. It is not too

much to hope that in years to come we will be able to say that unless an individual has a probability of success on the job of, say 0.80 or better, his score is failing. The establishment of such empirical critical points is dependent upon the execution of careful studies of the relationships between predictive scores and actual job success.

Agencies engaged in the selection of public servants have a definite obligation to carry on systematic research on the evaluation of the instruments they are using or propose to use. Some civil service administrators state that they have neither time nor the budget for such research and it is true that the week to week and month to month service demands are great. Such research, aimed at determining the reliabilities and validities of the instruments, is not theoretical research, but rather service conducted a year or more in advance. It has to do with the selection of candidates for openings not yet announced. Our present knowledge of testing techniques is not sufficient to allow us to apply results from one jurisdiction indiscriminately in another jurisdiction, or to apply a study based on one position to selecting candidates for a different type of work. Item difficulties and even the relationships between success on an item and success on the job differ from group to group. The alert Merit System agency is continually experimenting with new forms of items and new approaches to the problems of personnel selection. With the large numbers of unsolved problems in the field, the only adequate answer to our problems is a continuing and routine program of evaluating our results month by month and year by year.

Of what practical significance can the results of these studies be? In the first place our studies of test reliability tell us something about the technical perfection of our material. If test consistency is low, we know that steps can be taken to increase the reliability in the next edition, either by revising items or increasing their number. A more important question is that of determining the validities of our instruments. Here we are face to face again with the problem of how to measure success on the job. While we lack a complete answer to this problem, partial answers are better than none. When we can find definite relationships between our tests and job success we know we are on the right track even when the validity coefficients are not high. Furthermore the correlation between a test and some measure of job success is only one of the indicators of the value of the instrument.

A test with a validity as low as 0.20 may increase our proportion of successes by 50 per cent if we hire only the top 5 per cent on the test, and if the proportion of individuals successful on the job unselected by our tests was 0.30. How much a testing program does for an agency is determined by three factors: the relationship between the test and job success, the proportion of individuals who were successful before a selection program was instituted, and the proportion of applicants accepted through the testing procedures. Certainly in personnel selection we do not need to do a perfect job in order to do a useful one.

In conclusion, the achievement type of item seems to be a mainstay of personnel selection procedures, especially under Civil Service where the apparent applicability of the material in the eyes of the candidate is an important consideration. No longer is the test technician merely an artist. He is an artist with a growing body of scientific procedures at his command. If he is encouraged to continue his efforts, integrating service and research, we can be confident that in the coming years the caliber of our personnel in public nonelective positions can be continuously improved.

Proposed Report on Educational Qualifications of Public Health Veterinarians*

This is a provisional report published at the request of the Committee on Professional Education of the American Public Health Association before transmittal to the Governing Council in order to permit the members and Fellows of the Association to review it and to offer criticism and suggestions. All comments will be carefully weighed by the Committee on Professional Education and accepted changes will be incorporated in the report before presentation to the Governing Council for action.

I. General Scope of the Field

The interrelationship between animal and human diseases has become increasingly recognized. Scientific progress in bacteriology, epidemiology, and related fields opened the door to this newer knowledge through productive research and field investigation. Veterinary public health, although not always known by this name, has its origins as far back as the science of bacteriology.

Some of the fundamental contributions to the public health field have been made by workers in veterinary public health. The identification by Koch of the anthrax bacillus in 1876 and the establishing of it as the etiological agent was the first demonstration of a disease affecting both man and animals which was caused by a microörganism. In 1880, Pasteur's work with this disease yielded, for the first time, an effective bacterial vaccine. The work of Cooper, Kilbourne, and Smith in describing the transmission of Texas fever through ticks in 1893 established the validity of the theory of vector transmission of certain diseases. The discovery of the foot-and-mouth disease virus by Loeffler and Frosch in 1898 was the first demonstration of an infectious disease caused by a virus in animals or man. Another fundamental contribution was the discovery by Bang of the application of tuberculin as a diagnostic agent. The broad application of tuberculin testing by Mohler in the United States has led to the virtual eradication of bovine tuberculosis in this country. Through the development of improved methods of meat, poultry, and milk inspection, significant contributions to public health have been made by veterinarians. Higher standards have been established for these foods in the United States than in any other part of the world through the early efforts of Salmon in meat inspection and by Pearson and Law in milk sanitation.

II. Future Outlook

The future of veterinary public health is promising and the opportunities for service are steadily increasing. There is a real need for well trained public health veterinarians.

* This report, like all other statements of the committee on professional and technical qualifications in public health, is subject to periodic revision in order that it may be kept abreast of the best thought.

The growth of veterinary public health services in the United States has been stimulated through governmental agencies on three levels—federal, state, and local. Veterinary public health services provided on the local level considerably antedated efforts made by state governments. It is only within the past few years that the federal government has established veterinary public health services on a national scale. In the agricultural and economic aspects of veterinary medicine, however, services were developed at a much earlier date than in public health, and these were established by the federal government and later by state governments.

The number of veterinarians employed in veterinary public health services on a full-time basis is now more than 500. These persons are mostly employed by the U. S. Public Health Service, state health departments, and local health departments (city and county). In addition, between 2,000 and 3,000 veterinarians are employed by agricultural agencies such as the U. S. Department of Agriculture and agricultural agencies on state and local level whose work has direct bearing on public health either through the control of disease or through insuring adequate supplies of wholesome foods of animal origin. The majority of the veterinarians employed by health agencies are members of staffs of local health departments, while a smaller number are employed by federal and state health agencies.

III. Functions of Public Health Veterinarians

The public health veterinarian is responsible for the specialized activities related to the control of those animal diseases which are communicable to man. He participates in the planning, supervision and coördination activities designed to eradicate or control the animal diseases which are transmitted to man either by contact or indirectly through food products or by insect vectors. His functions include:

(a) Promotion of veterinary public health activities to eradicate animal diseases transmissible to man.
(b) Advice to and consultation with other divisions of the health department regarding veterinary public health problems, e.g., mastitis control activities; ante- and post-mortem inspection of meat food animals; investigation of the source of human disease of unknown etiology for possible animal sources.
(c) Consultation and liaison with voluntary agencies such as farm organizations and with official agencies such as the Conservation Service, e.g., coöperation with departments of agriculture and markets in programs to eradicate brucellosis and bovine tuberculosis; with wildlife conservation agencies in rabies control; with animal breeders and shippers in the enforcement of control regulations; with farm bureaus in reducing the hazard of animal disease to the health of farmers.
(d) Participation in supervision of milk, meat, and food inspection and sanitation.
(e) Enlisting the coöperation of private veterinary practitioners in public health problems, e.g., participation in rabies vaccination clinics, and support for milk and food sanitation and animal disease eradication programs.
(f) Development of special statistical services, e.g., for evaluation of control procedures for animal diseases such as rabies, brucellosis, equine encephalomyelitis.
(g) Administration of regulations, e.g., psittacosis and rabies quarantine.
(h) Planning and coöperating in research.

Lines of Promotion

The job classifications of public health veterinarians are related to local and state economic conditions. In many communities the staff of the local public health departments includes a public health veterinarian, and frequently the salary of the veterinarian is higher than the salary provided in comparable positions at state and federal levels. Job classifications as made by one branch of government cannot necessarily be applied to other branches except in a broad and general way. In general, appoint-

ments range from junior positions involving largely field and inspection duties to senior positions which are largely administrative. The following are typical job titles, arranged in order of responsibility:

Position Title
Veterinarian
Public Health Veterinarian
Senior Public Health Veterinarian
Director of Veterinary Public Health

IV. Educational Background of Public Health Veterinarians

Professional training in veterinary medicine is essential. Pre-veterinary college training providing a background in the sciences and humanities is required for entrance to schools of veterinary medicine in the United States that are approved by the American Veterinary Medical Association. Completion of a course leading to the degree of Doctor of Veterinary Medicine in a school of veterinary medicine approved by the Council on Education of the American Veterinary Medical Association is acceptable evidence of such training. Graduates of veterinary medical schools, outside the United States, of recognized standing may be considered acceptable. A license to practise veterinary medicine is required in several states.

V. Graduate Education, Training and Experience

Completion of a program of postgraduate study in public health extending over one academic year in a school of public health accredited by the American Public Health Association is essential. Postgraduate courses of instruction given in recognized institutions outside the United States may be considered acceptable.

Practical field experience, preferably before commencing the course, is desired. This is required by several of the accredited schools of public health before a degree is awarded. Field work should provide supervised experience in meat, milk, and poultry inspection in a department or service which is recognized for interstate purposes or by state health departments. Of particular value is a period of supervised training in a health department to permit the candidate to determine if he is suited for work in this field of veterinary medicine.

The candidate for a postgraduate public health degree will have had fundamental training in veterinary medicine prior to admission, and therefore his efforts should be directed toward obtaining a professional public health education. The broadening influence of contact with members of other professions interested in public health available in a school of public health, and the opportunity for exchanging ideas, are of inestimable value to the veterinarian.

The training for public health veterinarians in a school of public health should include:

(a) Instruction in the general principles and practice of public health, e.g., public health administration and practice, public health laws and economics and health education in order that the veterinarian will understand and be able to contribute to the development of a comprehensive health program. Such training will permit him to understand the problems of the other professional groups in public health and will enable him to define his own activities more clearly.
(b) Instruction in specialized fields which are of particular importance to veterinary public health, namely, epidemiology, bacteriology, parasitology, immunology, virology, tropical medicine, medical entomology, environmental sanitation, food sanitation, biostatistics, and nutrition.

In the schools of public health in the United States, the M.P.H. or some other Master's degree is conferred on veterinarians upon successful completion of the program of study.

Graduate education in schools other than schools of public health, leading to a Master of Science, Doctor of Science, or Doctor of Philosophy degree, may be

accepted in certain cases. It should be shown, however, that the major subjects of study have direct application in public health.

In regard to the training of veterinarians who are to be concerned primarily with laboratory work and research, graduate training emphasizing the scientific aspects, possibly leading to degrees in science and philosophy, may be the most appropriate. Such training may be obtained in some of the schools of public health, in some schools of veterinary medicine, or in graduate schools of the larger universities.

An adequate period of full-time practical experience in increasingly responsible positions constitutes an essential part of the education and training of the veterinarian if he is to assume the direction of a veterinary public health program.

Public health veterinarians, otherwise qualified, who have achieved notable success and who have had many years of full-time experience in an organized agency, may be considered as qualified even though lacking formal postgraduate academic training. However, it is to be emphasized that an exception to the requirements of a postgraduate course and supervised field training should be made only if the candidate, in addition to years of experience, has actually demonstrated his ability as a public health veterinarian by at least 4 years of noteworthy service.

VI. Personal Qualities

It is desirable that professionally trained personnel in veterinary public health, responsible for administrative practices and policies as well as relations with the public, should have personal qualities similar to those needed in leading positions in other fields of endeavor. These should include adaptability, common sense, creative ability, sound health, good judgment, leadership, alertness and enthusiasm for the field. Much of the success of the director of a program of veterinary public health will depend on his capacity to establish favorable relationships, stimulate coöperative effort, and earn the respect and confidence of those with whom he works.

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(as of Dec. 1, 1950)

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HOUSING AND THE HEALTH OFFICER

WE welcome the opportunity to publish in this issue of the JOURNAL a highly significant symposium on the Hygiene of Housing presented last fall at St. Louis. Two Health Commissioners and an Engineering-Director, representing three of our largest cities, contributed to this discussion; and it is to be hoped that smaller cities will follow suit in attacking one of the most outstanding challenges to American public health.

Dr. E. R. Krumbiegel has admirably analyzed the reasons why this challenge must be met. He points out that the day has gone by in which the Health Officer can limit his interests to the prevention of specific diseases due to gross insanitation. He must visualize his task as the promotion of health in a positive sense—and in a sense which includes the emotional, as well as the physiological factors involved. As he points out, it is quite illogical to stress the hygiene of the school and the factory and ignore the hygiene of the home, in which so much more of our time is spent.

Both Dr. Krumbiegel and Dr. J. Earl Smith emphasize the fact that the hygiene of housing is a problem which cannot be solved by the Health Department alone. Planning and zoning are vital elements in the picture; and their significance is now enhanced by the importance of sound planning in relation to the possible hazards of military attacks in case of war. The Health Officer must therefore work out (as has been done in St. Louis and Los Angeles) effective machinery for coöperation with Planning Commissions, Zoning Boards, Redevelopment Agencies, Building Departments, Fire Departments, and Housing Authorities.

The first essential in any community planning is knowledge of the facts; and here, as Dr. Smith points out, the Health Department has primary responsibility. For the discharge of this responsibility, the A.P.H.A. through its Committee on the Hygiene of Housing has provided a useful tool in its *Appraisal Method for Measuring the Quality of Housing;* [1] and the favorable comments on this procedure by Dr. Smith and Mr. Charles L. Senn should be noted by those who have not yet applied this instrument in their own communities.

Once the facts are known, the city can be divided into three general types of areas; those in which housing conditions are good and only require minor improvements; those in which conditions are not ideal but where rehabilitation and protection against further progress of blight offers real possibility of salvage; and those where the housing is so bad that it cannot economically be made fit for human habitation.

The second type of area, at present substandard but economically salvageable, offers the most immediate possibilities of improvement. Dr. Graves of Memphis concentrated on blocks of this class ten years ago. Dr. Smith in St. Louis is pursuing the same policy. Haphazard response to nuisance complaints can, of course, accomplish little; but systematic pressure for improvement based on intensive appraisal of a given area may check the spread of blight and achieve substantial and permanent results.

The problem of the really blighted areas may be approached, as a temporary expedient, by correction of some of the grosser evils through such ameliorative measures as those applied by Dr. Huntington Williams under the Baltimore Plan.

If the Health Officer is to play his part in the total program, adequate code regulations for the control of occupied housing are essential. Dr. Smith describes the success of his Health Department housing ordinance in St. Louis; and the Committee on the Hygiene of Housing is now at work on a simple and effective model Housing Code which it is hoped will be made available to all Health Officers before the close of the present calendar year.

Ultimately, the hopeless slums must be cleared away, which is the objective of a Re-development Program, in which the Health Officer should play his part as an indispensable adviser.

It must always be remembered, however, that it is practically useless and politically impossible to evict slum dwellers unless there are better dwellings available at rents within their means. This is why the nonprofit state housing programs and the directly subsidized Federal Housing Program form essential elements in the total picture. Great progress has been made during the past decade along this line. We had bright hopes from the Federal Housing Act of 1949; but progress has been regrettably slow—partly as a result of official inertia in Washington and largely as a result of the efforts of a powerful and completely unscrupulous lobby financed by the real estate interests. A recent article by L. F. Johnson of the National Public Housing Conference[2] should be read by those who are brought in contact with local manifestations of this vicious campaign.

Such lobbies may retard but cannot ultimately block sound and constructive social policies. The essentials of healthful housing for the future have been outlined by the Committee on the Hygiene of Housing in a series of three monographs on *Planning the Neighborhood, Planning the Home for Occupancy,* and *Construction and Equipment of the Home.*[3] These reports will give the Health Officer the information he needs in order to emphasize the ideals to be attained. Once these ideals—in their vital relation to physiological and emotional health—are understood, the Health Officer can effectively lead in a program of community education along the lines laid down by Dr. Krumbiegel and Dr. Smith. In few areas can he render a greater service to the cause of public health.

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1. Obtainable from the A.P.H.A. office. 1790 Broadway, New York 19.
2. *Survey* 86:551 (Dec.). 1950.
3. Obtainable from the A.P.H.A.; or from Public Administration Service, 1313 East 60 Street, Chicago, Ill.

EPILEPSY AS A PUBLIC HEALTH PROBLEM

DR. W. G. Lennox, in an article presented in this issue of the JOURNAL, calls attention to a problem which we have generally ignored in the past but which presents an important challenge to the progressive health administrator of the future.

Exact figures on the prevalence of epilepsy are lacking; but draft examinations indicate that there must be at least 800,000 epileptic persons in the United States, and perhaps twice that number. Among children of school age there are between 250,000 and 500,000 suffering from this disease. The manifestations of epilepsy are protean, varying from occasional "black-outs" in children which may have no further results, through the cases of "petit mal" to repetitive seizures of such seriousness as to require prolonged or permanent hospitalization. Putnam estimates that 50,000 cases are cared for in public institutions at a cost of $20,000,000 a year for their maintenance. Lennox believes the total economic burden of epilepsy (including unemployability) is five times this amount. Far more serious as a human problem is the influence of this disease on the emotional health of the affected individual and of the family involved. Too often fear of repulsion and ostracism on the part of others causes secrecy and a sense of shame, with consequent emotional pressure on all concerned.

Yet most of this suffering and economic loss is needless. Up to fifteen years ago, only bromides and phenobarbital were available for treatment. We now have in addition, dilantin, tridione, and others. With the use of drugs appropriate to a specific case complete control (not "cure") can be attained in 50 per cent of all cases and reasonable adjustment to normal living in an additional 35 per cent of cases. In about 80 per cent of all cases, the "controlled" case will be mentally normal or nearly so, with a personality which permits living with others and a productive place in society.

The obstacles to an effective program in this field are twofold. In the first place, there are only 24 anticonvulsive clinics in the United States, and perhaps 150 medical specialists in this field; and general practitioners and even pediatricians are often not familiar with modern treatment possibilities. In the second place, the stigma associated with the disease and the feeling that it is uncontrollable lead to attempted concealment rather than to an appeal for help.

Just here lies the challenge to our profession. The health department is in a position to develop control clinics for diagnosis and for assisting the private practitioner in treatment procedures; to employ public health nurses in case finding; and, above all, to educate the public as to the controllability of this important disease.

Dr. Leona Baumgartner of the New York City Health Department, has suggested the following striking parallel between venereal disease and epilepsy as public health problems:

1. Both have had a stigma attached to them so that the victims have often been kept from the benefits of treatment.
2. Both are diseases that are socially very expensive in terms of the untreated individual's inability to get and hold a job and the cost to society of maintaining the victims.
3. Diagnosis can be established with a few simple tests, but tests which the general practitioner often does not carry out. These tests can be given to ambulatory patients and are practical for a public health clinic set-up.
4. Both are amenable to simple drug therapy in an outpatient department.

5. After the diagnosis is established the general practitioner, with very little guidance, can usually carry out therapy.
6. The cost of treatment and control per case in epilepsy is relatively small as in the case of syphilis and gonorrhea.
7. Venereal diseases, to be sure, can be "cured" and epilepsy can only be "controlled"—but in the latter there is no chance of reinfection.

Difficulties in the way of venereal disease control have been largely overcome. They should be mastered in the case of epilepsy. The Maryland State Department of Health is the first state department to recognize this need. It has worked out a comprehensive program[1] centering about two Central Diagnostic Regulatory Clinics at the Harriet Lane and University of Maryland Hospitals in Baltimore, the consultation of the staff of these central clinics with private physicians by telephone and mail, local clinics in county health centers throughout the state, and local follow-up by county health officers and public health nurses. Seeds for similar action have been sown in other states; and impetus was given to the movement by extensive discussion last year at the Annual Meeting of the U. S. Children's Bureau with Directors of Maternal and Child Health and Crippled Children in Chicago.

The experience of Maryland will be watched with keen interest. If it succeeds as we believe it will, more and more health officers and pediatricians will come to agree that epilepsy is perhaps the most intriguing and the most rewarding of the disorders of childhood.[2]

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1. Plan for Maryland Epilepsy Program. Maryland State Department of Health, May, 1950.
2. A popular discussion of this problem has been prepared by Herbert Yahraes entitled *Epilepsy—The Ghost Is Out of the Closet*, and published as Pamphlet No. 98 by the Public Affairs Committee, Inc., 22 E. 38th Street, New York 16. Helpful pamphlets on this subject may also be obtained from the National Epilepsy League, 130 N. Wells St., Chicago 6, Ill.

ADMINISTRATIVE PLANNING ON THE STATE LEVEL

ECONOMICAL and efficient administrative relationships should always be among the major objectives of the State Health Officer. The pressure for reduced budgets for non-military services, at the same time that provision for civil defense imposed new and far-reaching responsibilities upon the Health Department, emphasizes the special importance of such relationships at the present time.

Dr. J. W. Mountin's article in this issue of the JOURNAL brings out the increasing top-level problems involved in the dispersion of responsibility for what are definitely health problems to a considerable group of state agencies other than the Health Department. In one case 23 different agencies are involved. Industrial health problems, safety problems, water pollution control, school health, hospital construction plans, medical care programs, tuberculosis control, geriatrics, and mental hygiene are among those, in which potential jurisdictional problems exist in many states. Allocation of health functions to other than health agencies may in certain instances be practically justified. In other cases, logically indefensible conflicts of authority are so embedded in the social structure that they cannot readily be resolved. Where duplication and overlapping may occur it should be the task of the

Health Officer to secure a maximum of coördination by provision of consultation service to the other agency involved, by the loan of qualified personnel, or by performance of selected tasks under contract or other arrangements with that agency.

Meanwhile, it is often desirable for the State Health Department to improve the administrative set-up in its own organization. With the growth of specialties in public health and the natural pressure for each specialty to acquire divisional rank, the State Health Officer may have 15 or 20 bureau chiefs reporting directly to him. This obviously is faulty administration; and certain State Health Officers have come to feel that a group of deputies should be introduced between the Health Officer himself and his bureau chiefs. Such major divisions as Central Office Management, Medical, Dental and Nursing Services, Services for Local Health Departments, and the General Public and Environmental Sanitation and Laboratory Service, naturally suggest themselves as possibilities. The best arrangement for a given department will vary, depending on type of services rendered and on the personalities of bureau chiefs. Some relief of the Health Officers from continuing important contacts with a dozen or more bureau chiefs seems essential for maximum efficiency.

TOO MANY DEGREES

THE Committee on Professional Education has for some time provided us with interesting data in regard to the diplomas and degrees awarded by universities in the United States and Canada in the general field of public health. Its most recent analysis shows what has been happening during the past 17 years.[1]

It seems most important that, in this new profession, we should aim at approaching the ideal (long attained in the field of medicine) of definite degrees which are generally accepted as indicating professional competence and which a prospective employer can understand and can rely upon. The two degrees now generally accepted in the United States are the M.P.H. and the Dr.P.H. It is encouraging to note that 9 universities now offer the M.P.H. and 7 offer the Dr.P.H., as compared with 1 university offering the M.P.H. and 5 offering the Dr.P.H. in 1933. Furthermore, it is sound to provide for students whose work is in the general field of public health but more closely related to the basic sciences involved than to public health practice. Such well recognized university degrees as M.S. and Ph.D. are offered to public health students in 4 universities; and the M.A. degree is given to candidates in health education at 2 universities.

Any satisfaction we may feel at this quantitative concentration on the 5 well established university degrees is quickly dispelled, however, by noting that besides these generally recognized and significant degrees, the total list of offerings includes no less than 16 other titles, each used by one or two universities. These include C.P.H., C.T.M., D.D.P.H., D.I.H., D.P.H., D.T.M., D.V.P.H. (the last 5 being Canadian "diplomas"), D.H.S. (doctor of health and safety), D.Ed. (doctor of education), L.C. (licentiate in hygiene, one suspects), M.H.E. (presumably master of health education, or perhaps master of health engineering), M.I.H., M.S.P.H., Ph.D. Hygiene, and Sc.M. Hygiene. (In addition, there are masters degrees and diplomas in hospital administration, but we are quite prepared to recognize that this field is not identical with public health and may require separate degrees.)

Canadian practice is, of course, influenced by English practice, since the graduate of a Canadian university may work in England and must conform to the

diplomas legally required in that country. For this reason, the American Public Health Association has—from the beginning of its accreditation program—accepted the Canadian Diploma in Public Health as, in every way, the equivalent of our Master of Public Health.

In the United States, however, there seems no valid reason for the growing multiplicity of public health degrees; and yet 10 different degrees (aside from the generally accepted ones) are offered in this country, each by one or two universities. It has long been the practice of the majority of institutions to give the general graduate degrees of M.S., M.A., and Ph.D. without specific designation. These are valid and accepted degrees representing definite attainment in postgraduate study, irrespective of the field of specialization. To offer degrees of Master of Science in Hygiene, Doctor of Science in Hygiene, and—as a climax of absurdity—Doctor of Philosophy in Hygiene—is most unfortunate. Why not give degrees of "Doctor of Philosophy in Fourteenth Century Poetry" or of "Doctor of Science in the Amino Group of Organic Compounds"? Or give each student a different degree, in accord with his particular thesis topic?

Professional degrees, on the other hand, must be given in a particular field; but it should be a reasonably comprehensive one. We do not give the medical student specializing in surgery a degree of M.D.S., or the one specializing in obstetrics a degree of M.D.O. They are all qualified to practise medicine whatever their major field of specialization may be. It should be the same with the M.P.H.; and so far as legal limitations permit, it seems highly undesirable to continue special professional degrees in tropical medicine, or industrial hygiene, or health education.

Dr. M. S. Marshall has recently discussed the general problem of multiplicity of degrees. He points out that "the invention of a degree appears to be an innocent move that is only the business of the school. The process is rarely innocent and it is very much everybody's business." He suggests that no new degrees should be coined without national approval by a federal authority or by a recognized federation of universities.[2] This is pretty strong medicine, but the epidemic of degrees does present us with a serious challenge.

The purpose of a degree is to certify to general academic or special professional competence; and, if it is to be useful to the holder, its significance (and its limitations) must be understood by employers (boards of health, health officers, boards and executives of voluntary agencies) and by the general public. No one can expect that 21 differently labeled varieties of public health graduates can be evaluated by any of these agencies.

The purchasers of public health brains will do well to stick to the standard accredited professional labels of M.P.H., Dr. P.H., and to the masters degrees (with specialization in health education) or to the accepted academic degrees of M.S. (without designation) and Ph.D. in the selection of their staffs; and we may hope that the eruption of over-specialized new degrees will in time subside.

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1. *A.J.P.H.* 41, 2:217–220 (Feb.), 1951.
2. Marshall, M.S. Upward by Degrees. *Science and Society* 73, 1884 (Jan. 27), 1951.

Public Health in the Defense Program*

The Association's Approach to the Problem

This Association is concerned with the maximum productive use of public health resources (personnel, organization, supplies and equipment) in the interest of national defense.

The Association is not concerned with securing of preferential deferment from military duty of persons now engaged in public health who might, in the national interest, serve more productively in the armed forces. At the same time the Association believes that it has an obligation to set before those in authority such considerations and proposed actions as seem to be essential in safeguarding the health of civilian populations.

Certain Basic Considerations

It would seem justifiable to assume without detailed argument or documentation, that there is general concurrence in the following conclusions:

That trained personnel with the necessary equipment and supplies are essential for the preservation of health in both the armed services and civilian populations;

That for more than a decade there has been a serious shortage in public health personnel; that this shortage grows more acute as each month passes; that it is not a deficiency which will be offset unless unusual measures are taken; that careful judgment must be exercised lest already understaffed health agencies, schools, etc., be further depleted;

That in time of emergency, when there is expansion of the armed forces, wide deployment of military personnel, dislocations of civil populations, and their reconcentration in industrial communities, and the necessity for planning to meet possible disruption of civil life by enemy action or sabotage, there will be an increasing demand for public health personnel, with equipment and facilities; that it would not only be unwise and hazardous to decrease present activities, necessary for day by day community health protection but it will be necessary to increase these because of new demands.

Related to the above premises, but not so clearly delineated, are certain other considerations.

One of these, relating to recruitment, is that while there are national mechanisms for obtaining certain categories of public health personnel by the armed forces (Selective Service; Public Law 779; Reserve Commissions), there are no similar provisions for recruitment of personnel needed for present and expanding public health duties in civilian populations. Recruitment for civilian public health personnel is at present on a local and state basis, designed to fill already existing vacancies, and has been ineffective in meeting the need. Since civilian recruiting in the field of public health is not approached in terms of national defense, there is only indirect and somewhat negative national recognition of the procedure, and it is in weak and ineffective competition with recruitment for other needs.

A second general consideration relates to training of public health personnel. Here two problems stand out:

a. On the job apprentice-type of training that health organizations ordinarily give to new employees, becomes less and less practicable and productive as the staffs of health departments are on the one hand depleted, and on

* Report of the Committee on Public Health in the Defense Program to the Executive Board, American Public Health Association.†

† Approved as an official statement by the Executive Board April 3, 1951.

the other hand, assigned new duties because of civil defense and problems of industrial concentration.

b. Schools of public health and other facilities for education or training in public health, while available for utilization on a national basis are perforce passive in recruitment programs inasmuch as at present there is no national procedure for insuring that there will be, for the duration of the defense emergency, a directed recruitment and training of public health personnel to meet national needs.

In further connection with schools of public health, and other facilities for education or training in public health, it must be recognized that these facilities will need to be expanded if their output is to meet the demand for replacements, new duties, and responsibilities that have arisen and are increasing in both the armed forces and civilian communities.

A third consideration concerns the need for prompt and clearly cut administration of governmental undertakings designed to develop new facilities and resources, utilizing additional personnel trained and experienced in public health: such undertaking as the provision of hospital facilities in localities where there is unusual concentration of populations because of industries with defense contracts; grants of funds in relation to medical and health aspects of civil defense, and similar emergency expansions of responsibility where the federal government must give assistance to the states and through them to their political subdivisions in order to meet unusual health problems.

In such circumstances as those just mentioned, there is always a tendency to create new administrative machinery to meet suddenly arising needs. But such newly created agencies must necessarily go through a lag stage of organization, confusion in early operation, establishment of relationships and, unfortunately, disturbance of those which have existed previously. In this connection attention is called to the fact that in the Public Health Service, the federal government already possesses a nucleus of organizational facilities unusually competent to meet new situations; that the state health departments, though understaffed, are experienced and capable of carrying out, coöperatively, the type of new duties brought by emergencies and that, of all areas where there are federal-state-local relationships, the greatest efficiency and least conflict has been found in the field of public health.

In view of the above situation it would appear that as a preliminary measure in relation to public health in the defense program, national action is indicated along several lines. It is therefore recommended that the proper authorities of the federal government give consideration to the intent of the several proposals that follow:

RECOMMENDATIONS

It is recommended:

1. That by such administrative or legislative action as is deemed appropriate and practicable, federal recognition be given to:
   a. The necessity of identifying public health service as an activity essential to the national defense, and its professional and technical personnel as in essential occupations.*
   b. The provision of sufficient numbers of persons trained in the several categories of public health for military and civilian needs.
2. That, in view of the critical shortage of qualified personnel and because of the length and complexity of training in the public health professions, all agencies utilize persons so trained in activities for which they are best fitted.
3. That questions of deferment of public health personnel, other than those covered by Executive Order under Public Law 779, at present employed in health departments, schools of public health and related operating or teaching institutions, be handled through a mechanism similar to that provided in the case of physicians, dentists, and veterinarians, or through appropriate

* It is suggested that the term "Public Health Personnel" be held to include physicians, dentists, veterinarians, nurses, engineers, and certain other specialized groups now employed full time in public health work, or who, under direction of an appropriate national agency, may be assigned to services or training for public health work.

channels of Selective Service under rules that would recognize the essentiality of public health activities in national defense; that individuals undergoing training in schools of public health, or bona fide related courses of instruction, be regarded as in the same category as internes in medicine in so far as their Selective Service status is concerned.

4. That in relation to recruitment of public health personnel, or of persons to be trained in public health work, there be evolved within the framework of existing laws and policy if possible, or under new ones if necessary, a procedure which will insure the entrance into public health work, or into training for public health work, of such numbers of persons as may be necessary to meet military and civilian needs in the several categories of public health.

More specifically, in this connection, it is recommended:

That to the maximum extent possible, under federal-state relationships, and in so far as is consistent with the national interests, the U. S. Public Health Service be designated and empowered and provided with sufficient funds to recruit and place on active status a pool of individuals trained, or to be trained, in public health; that these individuals be made available for civilian assignment or, on request, to the armed services; that such recruitment and training in no way replace or interfere with similar measures in the armed forces or civil organizations; that the U. S. Public Health Service assign such individuals as may be necessary to meet civilian needs, through mutual agreement with the state health officer concerned, and with full recognition that individuals so assigned would serve state or local government through temporary appointment to state or local office rather than by virtue of any federal status.

5. That there be recognition of the need for continued flow from professional schools of persons qualified in the basic professions from which public health personnel are drawn,* and that there be similar provisions for individuals possessing the educational qualifications necessary for further training and service in limited technical aspects of public health practice.*
6. That federal funds be provided as necessary to assist institutions offering education for public health.
7. That because of the necessity for a healthy population, and in view of the possibility of direct or indirect enemy action which would endanger the purity of food, milk, and water supplies, disrupt ordinary sanitary safeguards or precipitate widespread illness, national action be taken financially and through leadership along broad lines, to stimulate and assist the states and, through them, their political subdivisions in the establishment and maintenance of full-time local health departments.
8. That both in strengthening health service, and in providing new funds and facilities to meet health problems of civil defense, it be recognized that the health organizations already existing in the federal government, though in need of expansion, are highly competent in the various aspects and subcategories of public health; that by long experience they are accustomed to meet emergencies; that an excellent and efficient coöperative arrangement between the Public Health Service and the departments of health of the various states has long been in effect; and that the national interest would be served more swiftly and productively by continuing to channel all federal aid and advice in all categories of health matters through existing arrangements than by the creation of new special mechanisms for handling each sub-category contributing to health protection.
9. That due consideration be given to the needs of both military and civilian groups for vast equipment and supplies that will contribute to the preservation of health, and that a systematized national program with necessary priority provisions be instituted to insure the availability in adequate amount of such materials as surgical supplies, drugs, antibiotics, insecticides, disinfectants, sera, vaccines, etc., and materials for construction, equipment, and operation of health facilities.

Finally, it should be emphasized that the Association recognizes that protection of the public health represents only one facet of the great and complex problem of national defense. It ventures to submit this statement only because it feels that as a professional association, national in scope and in touch with public health problems and resources, it may not remain silent. Discussion of the present situation and recommendations for meeting existing and foreseeable needs have been presented with restraint

* See footnote, page 584.

rather than in exaggeration, and are subject to change as the national defense situation develops.

Report prepared by the following Committee:

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ANNA M. FILLMORE, R.N.
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WILLIAM P. SHEPARD, M.D.
HUNTINGTON WILLIAMS, M.D.
W. PALMER DEARING, M.D., *Consultant*

LETTER TO THE EDITOR

TO THE EDITOR:

In view of your editorial "What Are We Waiting For?" in the February *Journal* and the gradual narrowing of the gap between present views and mine of 1939, I would like to write your fluoridation editorial for, say, July, 1962.

"It is most gratifying to those interested in public health to watch the continually declining dental caries rates accomplished by fluoridation of community water supplies. It is especially pleasing to see even better results shown in recent reports from those cities where public officials dared to increase the fluorine content of the water in the winter to as high as 2.25 p.p.m. in order to provide a year round optimum of fluorine to form teeth resistant to the initiation of dental caries. The acceptance of the 'fluorosed' tooth as the really desirable tooth was a step revolutionary in thought and not yet accepted by the diehards who trembled at the thought of mottled enamel. The almost complete elimination of caries, except in pits and fissures—and we await the final demonstration of elimination of this form of tooth decay through fissure-preventing dietaries—is more than we could have dreamed of a dozen years ago during the days of 1 p.p.m. and the belief that the mechanism of action of topically applied fluoride was the same as that of fluorine in the formation of enamel.

"The per capita cost of fluoridizing water, has of course been higher with seasonal variation of the dosage, but the life-time cost still is less than that of a single visit to a dentist. There has also been achieved much better alignment of the permanent dentition because of full retention of the deciduous teeth and, because of the resulting better occlusion, there has been noticeably less periodontal disease.

"The troublesome problem of bringing the benefits of fluorine in the formation of teeth to rural people has for the most part been solved by the rural people. When it became evident that city people were deriving benefits from water that was denied to them they accepted the system of distribution of fluoride tablets through the schools, and the younger generation in the countryside is now catching up with city youths in dental health.

"Certainly we of the older group were born thirty years too soon, as none of the benefits of fluoridized water have come to us."

GERALD J. COX, Ph.D.
Director of Dental Research, University of Pittsburgh, School of Dentistry

Credit Lines

FOUR CENTURIES OF A BRITISH REPORT

The Royal College of Physicians of London has prepared reports for more than four centuries. The custom has been resumed in the publication of the *Committee Reports* of December, 1942–April, 1947. The report of the Planning Committee on the recruitment and selection of medical students and on the training of a doctor are especially timely and interesting to American readers. The teaching of social and preventive medicine, psychiatry, neurology, dermatology, and cardiology are covered by separate reports. Other subjects are the student health services, organization of a child health and welfare service, rheumatic fever, the organization of cardiological and dermatological hospital services, and the design of dwelling houses.

It is recommended that university education be made free. At least one open fireplace is suggested for each home. A wide and burning interest in humanity is a major requisite for a successful professor of social and preventive medicine. A detailed plan is provided for a coördinated mental health service.

There is something for everyone in these well written reports. The volume is presumably available from the College at Pall Mall East, London S.W. 1.

HOLDING UP A MIRROR TO THEMSELVES

One of the many recent manifestations that Missourians intend to improve their public health services is to be found in *A Citizen's Look*. Published by the Missouri State Health Council, it is a brief study with recommendations. by a citizen group, of the needs of their state for preventive health services. In nontechnical language and apart from technical administrative details, the report recommends more state and local support of local health services, county or district organization of local health departments, and local health councils. It makes the bold suggestion that the state districts cut off the direct services, particularly nursing, now being given in unorganized counties, both because they are too minor to be significant and in order that the counties will undertake to meet their own needs.

In making the study, the seven-man committee of the State Health Council had the benefit of the technical study of the State's Division of Health, recently made by Roscoe P. Kandle, M.D., of the American Public Health Association.

The study is very much worth a look for what it says in few words. Missouri Health Council, 1805 Ella St., Jefferson City.

ATTRACTIVE BABIES HAVE APPEAL

The American Medical Association has used a series of pictures of babies with personality plus to underline its mental hygiene messages. *Calling All Parents* was prepared by the Bureau of Health Education. It is an attempt—that definitely comes off—to indicate to parents the varied personality and moods of the child and how to deal with them. Its unwritten theme is that babies start early being people and should be respected as such. Order Department, American Medical Association, 535 N. Dearborn St., Chicago 10. Single copy 25 cents, with various reductions for quantity orders up to $90 per 1,000.

WATER RESOURCES REPORT

The President's Water Resources Policy Commission has completed its assignment with the publication of a

three volume report. Appointed in January, 1950, the commission was assigned the task of studying and making recommendations on policies in the field of water resources, including existing legislation. The commission says that the nation, because it lacks a uniform federal policy for comprehensive development of land and water resources, is slowly losing in a piecemeal battle to meet increasing water needs. Only with an integrated national policy based on development of entire river basins can a bountiful water supply be preserved suitable for the many uses to which it must be put. Among the 7 points of a national objective is the protection of the public health through pollution abatement and control, mosquito control, and all necessary provision for an abundance of high-grade municipal water supply.

The volumes of the report are:

Volume 1, *A Water Policy for the American People*, which offers a coördinated national program for the development of water resources.

Volume 2, *Ten Rivers in America's Future*, describing and discussing the problems of 10 river basins in different parts of the country; and

Volume 3, *Water Resources Law*, which summarizes federal law concerned with water resources.

A summary pamphlet is also available. Each of the three can be procured from the Supt. of Documents, Washington, D. C., for $3.25, $6.00, and $2.25 respectively. The summary is 15 cents. The report is a "must" for the public health engineer, no less than for the municipal engineer and regional planner.

PITTSBURGH MAKES PROGRESS

The February, 1951, *Federator* of the Allegheny County (Pa.) Health and Welfare Federation is devoted almost exclusively to the reorganization developments of the Pittsburgh Department of Health. In a lead article, the city's health officer, I. Hope Alexander, M.D., says that the 1948 study grew out of Dr. Huntington Williams's statement that "People of any city can have as good a health department as they earn, or as poor a one as they deserve." Starting with that as a challenge he tells what has happened by way of providing the services that should be found in every health department worthy of the name —and more. He pays tribute to the support of the public which made the reorganization and new plans possible, as did a number of others writing in the same issue. The *Federator's* editor is Margaret Power Jones; its offices are at 519 Smithfield St., Pittsburgh 22.

DEVOTION BEYOND THE CALL OF DUTY

The National Committee on Films for Safety recently had a two day meeting at which 40 reels of film and soundslide were screened and then discussed for a half day. The awards and other official business will be reported elsewhere. Here we want to give public recognition to the representative of the American Public Health Association on this committee, H. E. Kleinschmidt, M.D. We are sure that his eyes were bloodshot after it was all over and that for a week he jumped at the slightest sound after hearing and seeing so many crashes and smashes. *The 40 days of Musa Dagh* are as nothing to him.

WE KNOW — LET'S GO

"The proper application of the truth," wrote General Eisenhower in his book, "is far more important than mere knowledge of its existence." Thus does a new N.T.A. pamphlet emphasize the need for acts to follow the facts.

The pamphlet urges joint fact finding, planning, and action to serve the veteran by serving the community—because, says the title, *Veterans Are People Too.* Local service and veterans' organizations can benefit the tuberculous veteran by joining hands with the TB association to promote the development of needed

community tuberculosis control and treatment facilities for everybody.

Copies for bulk distribution are available through state and local tuberculosis associations. Free samples from Veterans' Service, National Tuberculosis Association, 1790 Broadway, New York City.

THE LEGISLATIVE MILL

"How a Bill Becomes Law" is an illustrated three page pictorial in the March, 1951, issue of the *NEA Journal*. It is a good brief description of the route a bill travels from its introduction in one house of Congress to its final signing by the President, with several possible waste basket stops on the way. It rightly pretends to give only highlights omitting particularly "behind-the-scenes" action. A good introduction for the person who "starts from scratch" in understanding legislative processes. National Education Association, 1201 16th St., N.W., Washington 6, D. C.

ANTIMICROBIAL ACTIVITY OF TEN ANTIBIOTICS

An excellent digest of the literature showing how each of 10 antibiotics affects 23 different classes of microörganisms has been published by the Heyden Chemical Corporation, 393 Seventh Avenue, New York 1.

The antibiotics considered are penicillin, streptomycin, dihydrostreptomycin, tyrothricin, bacitracin, aureomycin, chloromycetin, terramycin, polymyxin, and neomycin.

This is an excellent reference chart that can help many a perplexed public health physician who is asked for advice from his professional colleagues.

ANNUAL REPORTS

Equal Economic Opportunity is the 40th anniversary year book of the National Urban League and a handsome job it is. Told by many persons, it is the story of the progress in making the Negro an equal with other citizens of the United States. In this period the Negro's special health problems have been both cause and effect of his social and economic disadvantage. Among the contributors to the text of the report is Dr. Howard A. Rusk, Chairman, Department of Rehabilitation and Physical Medicine, New York University College of Medicine. Lester B. Granger is the League's executive director — 1133 Broadway, New York.

Annual Report for 1950 of the National Organization for Public Health Nursing except for its red cover is a modest little document. But it has a good deal to tell—the memorable unanimous vote to approve the reorganization of the various nursing agencies into two national bodies, the small surplus at the end of the year, the reorganization of the editorial unit, and finally, among others, the headquarters move to 2 Park Ave., New York City, at the year's end.

Life and Death in Florida, 1940–1949 is a history of the growth in health activities in the state during the 10 year period. While the population of the state was increasing by 44 per cent, for example, the population in the care of "accredited" health departments more than tripled. The budgets for these county health departments, covering all but 4 counties, multiplied by 8 times. Per capita expenditures have increased from 38 cents to $1.34. Significantly, the increase has been greatest in local funds. The per capita from federal funds has actually decreased. But the report is completely anonymous. One cannot tell from it who constitutes the State Board of Health, who is the health officer, or who are any of his staff. Florida State Board of Health, Jacksonville.

The First Annual Report of the United States National Committee on Vital and Health Statistics has recently

been published. This committee was established in January, 1949, "to study broadly the problems of producing satisfactory national and international statistics in the field of health." A major accomplishment has been the formulation of definitions of live birth and fetal death proposed for international use. Its chairman is Lowell J. Reed, Ph.D., vice-president of the Johns Hopkins University; its secretary, I. M. Moriyama, chief of the Mortality Analysis Branch, National Office of Vital Statistics. This report, though brief, gives a good indication of the scope of the committee's activities. U. S. Gov. Ptg. Office, Washington, D. C., 15 cents.

WORTH ACQUIRING

"A Practical Approach to Accident Prevention," by Harry Dietrich, M.D., appears in the February issue of *The Crippled Child*. This is the monthly magazine of the National Society for Crippled Children and Adults. Dr. Dietrich estimates that 12,000 children are killed annually in the United States through accidents, and result in permanent injury to between 30,000 and 50,000 children. The answer according to Dr. Dietrich is training and discipline in the home. There's a very scientific definition of spanking, the least important element in discipline—"the proper anatomical application of a dispassionate hand." "Safe behavior," says Dr. Dietrich, "like any other form of behavior grows out of early parent-child relations. The ultimate and difficult responsibility for accident prevention rests on the parents; no amount of money or moaning will even produce a single, easy, accident prevention injection." The address of the society is 11 S. LaSalle St., Chicago 3.

Teacher Attitudes and Happy School Living has been published by the West Virginia State Department of Health in coöperation with the West Virginia Department of Education and the State Superintendent of Free Schools. Its authors are Hess Farmer, consultant in mental hygiene, and Elsa Casali, teacher in a graded school. It pictures a series of approaches to schoolroom problems showing the effects both of good and bad approaches. Amusing line drawings illustrate the pamphlet. Many of the situations might also be pertinent to situations in the home. West Virginia State Department of Health, Charleston 5. No information as to cost.

Students of administration will find a simple, practical and useful aid in the manual entitled *State Administrative Practice* recently produced by the University of Wisconsin. The manual is a part of a splendid example of a joint activity of adult educators, experts in government and the state health department. The manual was used in a course which was a second in a series in public health administration for Wisconsin government officials. Topics included the job of the administrator, the problem of organization, and the role of the supervisor. The manual is worth having by itself; it would be especially valuable as a part of an inservice training course. It is available through the Bureau of Government, University Extension Division, Madison 6, Wis., for $2.50. "Solutions to Case Studies" presented are an additional 50 cents.

BOOKS AND REPORTS

All reviews are prepared on invitation. Unsolicited reviews cannot be accepted.

Communicable Diseases—*Edited by Roscoe L. Pullen. Philadelphia: Lea and Febiger,* 1950. 1035 pp., 253 illus., 20 plates. Price, $20.00.

This volume, monumental in size, is designed as a text or reference work on the clinical aspects of the communicable diseases. It is the work of 53 authors, most of whom are or have been connected with the Charity Hospital in New Orleans. It thus reflects to a high degree the experience and thinking of this one hospital staff and inevitably portrays the diseases as they are seen in the southern latitudes.

The arrangement of the volume is perplexing and unusual. An introductory section covers such a diversity of topics as methods of spread, isolation techniques, elements of physical diagnosis, and principles of therapy. The balance of the book is devoted to the several diseases, most of which are grouped according to dominant clinical manifestations. This arrangement produces strange groupings as well as equally strange separations. The reviewer has found it hard to accept the separation of typhoid from dysentery, and both of these from cholera and food poisoning. Anthrax is presented with measles and chickenpox in the section on the exanthematas, whereas tularemia with a somewhat comparable local lesion at the point of entry is classed with the diseases "with widespread systemic manifestations." Scarlet fever and diphtheria with their toxic manifestations might equally well belong in this latter category. Rheumatic fever, leptospirosis, dengue, leprosy, and puerperal infections make strange bedfellows. Many other inconsistencies of classification are quickly manifest. The confusion is accentuated by a section covering diseases of parasitic origin and another on "diseases capable of becoming a potential menace," the latter group including such parasitic infections as filariasis and schistosomiasis. No system of classification is without its defects, but few have so many inconsistencies.

As in any volume which is a compilation of chapters by many contributors, there is a notable absence of balance and a striking variation of quality. Thus one wonders at the 10 references (the latest in 1945) that follow a 9 page chapter on scarlet fever as contrasted with the 153 references after a 14 page section on brucellosis. Scarlet fever is definitely a less serious condition in the southern areas than in the north, but is this the proper allocation of emphasis for a book that should have more than a local appeal? Or should such a volume in its text be so heavily based on the experiences in one hospital without adequate attention to the results in other situations?

There are many excellent chapters in this volume and much material of real value, but many of the sections are marred by questionable statements or even inaccuracies, and lack the conviction and authority of wide experience. The volume is well printed and contains many good plates. Its chief value lies in many chapters of excellent quality and the sections on the unusual diseases that are not covered in most other books on communicable diseases.

GAYLORD W. ANDERSON

An International Index of Films and Filmstrips on the Health and Welfare of Children—*Prepared by the United Nations Educational, Scientific*

and Cultural Organization and the World Health Organization. New York: Columbia University Press, 1950. 213 pp. Price, $1.00.

This volume has been jointly prepared by the World Health Organization and the United Nations Educational, Scientific and Cultural Organization. As the foreword states, it represents a first step toward the accomplishment of some of the objectives of these two organizations, which it is hoped will be a continuing collaboration in the field of health education by means of films and other visual media.

Of the 198 pages of listings, 73 come from the United States of America, 29 from the United Kingdom, 3 from the United Nations, and 2 from the Union of Soviet Socialist Republics.

The descriptions and comments on the films are those submitted by the sources providing information. None of the films have been critically viewed from the standpoint of usefulness on an international basis. Some of the films probably will have a very limited international usefulness but some, having been prepared specifically for international use, will be widely appreciated.

REGINALD M. ATWATER

Paul Ehrlich—*By Martha Marquardt. New York: Henry Schuman,* 1951. 255 pp. Price, $3.50.

The discovery of antibiotics is the last word in therapeutics for the younger members of the present generation. Forty years ago Paul Ehrlich founded the newest branch of medical science, chemotherapy. Paul Ehrlich is well known to the American film audience as the maker of "Magic Bullets."

There is a saying that nobody can stay a king before his valet, but for Martha Marquardt, Ehrlich's secretary during his most important years, the hero sometimes takes on superhuman qualities. With this little reservation, the book is very good reading.

Ehrlich's career, his work with Robert Koch, and his fight with Emil von Behring are dramatically portrayed. The steps which led to 606 are vividly described—606 not being the number of experiments performed, but indicative of the number of chemical substances tested for the treatment of syphilis. It is coincidental that "0606" was offered the Cleveland Health Museum for its telephone number, which no Cleveland doctor has a hard time to remember.

Ehrlich's scientific development is a very straight-line one from his staining experiments on blood cells, when he was a medical student only eighteen years old, to his Nobel Prize and his discovery of salvarsan.

The energetic Henry Schuman has added another good book to his *Life of Science Library.* It is a book which should especially be of great interest to science students in high schools and colleges, but should also be very entertaining reading for the public health worker.

BRUNO GEBHARD

Philanthropic Giving—*By F. Emerson Andrews. New York: Russell Sage Foundation,* 1950. 301 pp. Price, $3.00.

In this excellent book F. Emerson Andrews and the Russell Sage Foundation have performed a valuable service for the many persons concerned with philanthropic giving.

Whether the reader is a health or welfare worker or executive, an educator, a lawyer or a banker who advises clients, or just an average American citizen interested in the progress of this country and the other fellow, he will find this an absorbing and enlightening volume.

Mr. Andrews discusses in clear and interesting fashion, How Giving Grew, Who Gives and How Much, Charity Rackets, The Government in Philanthropy, Community Chests, Independent "Drives," Foundations, Religious Giving, Education and Research, and Tax Savings on Gifts.

The reader who likes to look behind the facts will find the section on the history of charitable and philanthropic giving fascinating reading. Here the picture swings from early Egyptian times through the Chinese, Greek, and Roman concepts of charity to the early English "statute of charitable uses" of 1601, thence into the changing patterns of modern giving.

This excellent book also furnishes practical information and guidance on the problems faced by each type of giver.

KENNETH DEWITT WIDDEMER

Physician to the World. The Life of General William C. Gorgas—*By John M. Gibson. Durham, N. C.: Duke University Press,* 1950. 315 pp. Price, $4.50.

Those of us who were members of the American Public Health Association as long ago as 1917 will recall that the principal address at the Annual Meeting in Washington, D. C., in that year was delivered by a distinguished, white-haired, soft-speaking, typical southern gentleman and physician named William Crawford Gorgas. Then at the height of his well merited fame, Gorgas had been serving since 1914 as Surgeon General of the Army. Two years after his retirement from this position, in 1920, General Gorgas died in England while en route to the endemic disease centers in West Africa on a mission for the International Health Board of the Rockefeller Foundation.

Although the name of Gorgas has been only a memory for more than three decades, his many sanitary achievements, especially his conquests of yellow fever and malaria in Havana and Panama, never can be or will be forgotten. The story of these events and of his life has been told in numerous books, particularly in the rather journalistic biography by his wife, Marie D. Gorgas, prepared in collaboration with Burton J. Hendrick and published in 1924.

Now this imperishable story is told again, appropriately by the director of public health education in Gorgas's native state, Alabama. It is told very well indeed, without any of that brash jauntiness which characterizes some of the popular writings about our so-called health heroes. Not only is the style smooth and interesting, but the material, augmented by private papers made available by the Gorgas family, seems authoritative. It is also more complete in describing some of the later and less well known facets of the famous Gorgas career.

This well printed, well documented, well indexed, and well written book deserves wide reading, not only by physicians and sanitarians but by the general public.

JAMES A. TOBEY

Camping: A Guide to Outdoor Safety and Comfort—*By Arthur H. DesGrey. New York: Ronald Press,* 1950. 171 pp. Price, $3.00.

This small volume is prepared primarily for the inexperienced camper. The author in his preface suggests that the manual may be helpful to camp directors and counselors in organized permanent camps, but the material is slanted definitely to the campers who "go out on their own." Though not stated explicitly, program ideas will reveal themselves to the alert camp director who reads this book.

For those persons who wish to enjoy the outdoors, the book presents a collection of useful information. The practical hints on how to plan the camp trip, select the camp site, and set up and organize the camp, should be helpful to the experienced camper as well as to the novice.

DesGrey's concern for the health, safety, and comfort of the camper is apparent throughout the book. It is a recurring theme. The author makes a significant contribution to camping in general with his insistence that camping

is something to be enjoyed rather than endured. Comfort and freedom from health and accident hazards are prerequisites to this enjoyment.

Some of the material in the final chapter on "Camp Hints and Aids" is repetitious, and all of it might well be included in the preceding chapters. Too, considerable space is given to boating and canoeing, but little is devoted to trail trips, a form of camping activity becoming increasingly popular in many parts of the country.

Despite some limitations, the book constitutes a practical guide for any person contemplating a camping experience.

DAVID F. DEMARCHE

Cerebral Palsy—*By John F. Pohl. St. Paul, Minn.: Bruce Publishing Company,* 1950. 213 pp. Price, $5.00.

A Manual of Cerebral Palsy Equipment. *Chicago: National Society for Crippled Children and Adults,* 1950. 268 pp. Price, $3.75.

These two volumes will help orient the physician and therapist in this confusing area of medical practice.

Dr. Pohl's volume is a carefully thought out review of the problem of cerebral palsy with the emphasis primarily on therapy. He presents a lucid account of the various physical handicaps and a painstaking analysis of physical therapy, occupational therapy, and speech therapy methods for dealing with them. The technics recommended seem entirely reliable and the therapist who treats cerebral palsy will feel safer with this book at his side.

The *Manual of Cerebral Palsy Equipment* is a sensibly arranged catalog of 127 different pieces of equipment assembled by the National Society for Crippled Children and Adults from many sources. The selection is very good and ranges from furniture to toys. Directions for constructing most items are clearly set down and greatly increase the practical usefulness of the book. For a first edition this is a worthy compilation.

These volumes are like guidebooks in the wilderness and are welcome additions to the meager literature devoted to cerebral palsy. Beyond them, there still exists real need for a more exhaustive study of the subject. The problem merits a far-reaching exploration of issues other than the obvious physical defects. The emotional problems alone are perhaps of greater significance than any other, and the question of education, socialization, and vocation may outweigh the medical considerations. After the problems of the patient are dealt with, there remain the problems of the parent which may be greater still.

WILLIAM COOPER

Diseases of the Tropics—*By George Cheever Shattuck. New York: Appleton-Century-Crofts,* 1951. 783 pp., 157 figures and tables. Price, $10.00.

Dr. Shattuck has compressed into 783 pages of text a concise account of the diseases of the Tropics. His aim, according to the preface, has been to offer such a text at a moderate cost. In many respects he has succeeded.

The chapter headings follow the traditional classification of diseases according to microbiological types—blood and tissue protozoa, spirochetes, rickettsia, bacteria, viruses, helminths, intestinal protozoa, and fungi. These sections are followed by four additional ones on miscellaneous diseases, nutritional disturbances, tropical climates and health and noxious animals, plants and arthropods. This reviewer looks upon this approach as more suitable for the biologist than for the clinician. The grouping of disease entities on the basis of symptomatic expressions, such as diarrhea, dysentery, and hepatoses, would be much more helpful to clinicians.

There will no doubt be mixed reactions to Dr. Shattuck's choice of material in the various sections. With such a wealth of material to cull and compress into the allotted number of pages, some

items of importance are bound to be omitted and others considered only casually. The mycoses, for example, which represent some of the most frequent diseases in the Tropics, occupy only 16½ pages, while 12 pages are given to lymphogranuloma venereum. The chapter on Tropical Climate, Heat and Health consists of but 7 pages.

The presentations on therapy often leave the reader confused. Although the author has reviewed the newer forms of treatment, he has in most instances given the results and conclusions of various observers without an interpretation and synthesis of the reports into a workable program. The reader is left, at the end of the discussions, with several points of view and, at times, with several therapeutic agents and no comparative evaluation. At times, too, details in treatment are omitted, for example the treatment of the North and South American blastomycoses is grouped.

This work represents a compilation of recent data on diagnosis, control, and treatment of tropical diseases at a time when older texts have not been brought up to date and when new presentations in the field are scarce, no doubt as the result of lagging interest following World War II. Its value rests in the bringing together, under one cover, of the newer diagnostic, therapeutic, and preventive procedures in this field.

W. A. SODEMAN

Epidemiology of Mental Disorder, 1950. *New York: Milbank Memorial Fund.* 198 pp. Price, $.50.

This most interesting volume reports a round-table discussion between distinguished workers in the two fields of epidemiology and psychiatry and marks a further step on what will probably be a long road. Whatever definition of epidemiology is used, and several are presented in this discussion, it is obvious that the discipline has a contribution to make to the understanding, the prevention, and possibly even the treatment of any deviation from the normal to which living things are liable. The idea that epidemiology should concern itself only with the causes for the appearance in unusual numbers of cases of communicable diseases has required a long time to die, but this desirable result seems finally to have been accomplished.

To begin to study the epidemiology of any disease or group of diseases with the idea that useful results may be easily come by is of course to invite disappointment. Human beings differ in innumerable ways and until some notion of at least the general classes of differences which might influence the prevalence of the disease under study has been obtained, statistical studies of group differences between those who do and those who do not suffer from it can be of no real value.

It would appear from the observations reported in this volume that only a beginning has been made in the definition of some of the factors which might be of importance in studying mental deviation. It seems highly probable, however, that as a result of such discussions we will soon begin to unravel some of the puzzles presented by that enormous mass of mental diseases and defects with which our civilization is confronted.

In the meanwhile this volume is itself, in spite of the absence of definite conclusions, both interesting and stimulating to the reader. A. W. FREEMAN

Family Centered Maternity and Infant Care—*By Edith B. Jackson and Genevieve Trainham, Editors. New York: Josiah Macy, Jr., Foundation,* 1950. 29 pp. Single copy, $.25.

This pamphlet was developed by a Subcommittee on Rooming-In of the fourth Conference on Problems of Infancy and Early Childhood sponsored by the Josiah Macy, Jr., Foundation. Section I defines rooming-in and reviews its objectives, physical, psychological, and

educational. Section II reviews the history of this practice, and lists the hospitals following it, in chronological order of their adoption of the procedure. Section III is a compilation of possible questions for research in reference to rooming-in. A bibliography is included.

FLORENCE A. BROWNE

A History of Medicine. Vol. I, Primitive and Archaic Medicine—*By Henry E. Sigerist. New York: Oxford University Press,* 1951. xxi + 564 pp. Illustrated. Price, $8.50.

Several years ago Dr. Sigerist resigned his chair at Johns Hopkins to write a comprehensive history of medicine. As he envisaged this project, it would ultimately consist of five or six volumes on the history of medicine and two or three volumes on the sociology of medicine. Those in medicine and public health who are interested in the development of these areas have looked with eager anticipation for the appearance of Sigerist's first volume. Now it has appeared and it is abundantly clear that the "New History" of medicine has come of age.

The first volume consists of four sections. In the first of these, Sigerist discusses the historical approach to medicine, defines the problems and analyzes the methods of medical history, and indicates why the writing of a new history of medicine is necessary. In this connection, he also discusses the history and geography of disease. The three sections that follow deal successively with primitive medicine, and with medicine in the civilizations of Egypt and Mesopotamia.

Sigerist's *History* differs in its basic approach from other histories of medicine and public health current at present. Instead of being oriented to the physician or to the disease, it assumes that the societal framework within which these occur and operate must be the more basic orientation of the historian. For this reason the health and disease of the peoples of the Ancient Orient are considered in relation to the social, economic, and cultural environment of which they were a part. This results in a rich illumination of the more purely medical aspects.

Worthy of particular attention is the section on primitive medicine. This is the best short account of the subject, and is up to date in its use of anthropological materials. Readers of the *Journal* will very likely be interested in the analysis of the contagion idea, with its origins in the religious world of Mesopotamia, for, through the medium of Judaism, contagion was destined to play an important role in Western medicine.

The book is fully documented, it has four bibliographic appendices, is richly illustrated, and has an index. It should be read by every person concerned with medicine and public health, for it will enrich his understanding of his own activity. We look forward to the succeeding volumes of Sigerist's *History*.

GEORGE ROSEN

Sanitary Food Handling—*By Bernard E. Silver. Albany, N. Y.: University of the State of New York,* 1950. 198 pp. Price, $2.65.

This manual should be of great value to the health department, food industry, or educational institution which is conducting, or planning to conduct, a formal program of food handler training. Consisting of ten sections, each unit describes the objectives, related information, recommended procedures, reference materials, and tests which may be used in such a course.

The subject matter discussed includes: (1) conditions necessary for the growth of bacteria, (2) food-borne diseases, (3) food poisoning caused by bacteria, (4) food poisoning caused by chemicals, plants, and animals, (5) parasitic diseases transmitted by foods, (6) protecting foods from spoilage, (7) rodent control and proper storage of foods, (8) control of insects commonly found

in food establishments, (9) washing of dishes and sanitary design of equipment, and (10) safe plumbing connections and self-inspection of restaurants.

Although most of the ordinance requirements are quoted from the New York State or City Sanitary Codes, there are various references to food-borne outbreaks reported by other states and cities and the U. S. Public Health Service. Of greatest value to the instructor who is not experienced in food handler training will be the comprehensive discussion of the subject matter in simple terms, and the suggested procedures for presenting this material through the use of the blackboard, demonstrations, and audio-visual aids. KARL M. MASON

Medical School Grants and Finances. *Public Health Service Publications Nos. 53, 54, and 55. Part I—Conclusions and Recommendations, $.20. Part II—Financial Status and Needs of Medical Schools, $.30. Part III—Public Health Service Grants. Their Distribution and Impact on Medical Schools, $.20. Washington, D.C.:U.S. Gov. Ptg. Office,* 1951.

The Surgeon General's Committee on Medical School Grants and Finances, of which Dr. Lowell J. Reed was the chairman, has made its timely and important report in three parts. Part I contains the conclusions and recommendations. Part II is concerned with the financial status and needs of medical schools. The Public Health Service grants, their distribution and impact on the medical schools is discussed in detail in Part III.

Samples of the findings include the following: Federal research grants increased from $4 to $17 million between 1941 and 1948. Research has expanded much more than any other function of medical schools. Gains have been made in the teaching of cancer and mental health, however. The medical schools are experiencing progressively more acute difficulties in sustaining well-rounded teaching programs. It is estimated that $40 million a year is necessary for unmet needs. The teaching of public health and preventive medicine needs strengthening in many schools.

The reports contain detailed documentary data. The steps leading to conclusions and recommendations are clearly presented. These scholarly but down-to-earth reports are well worth study.

ROSCOE P. KANDLE

Serum Sickness—*By C. Frh. Von Pirquet and Bela Schick. Baltimore: Williams & Wilkins,* 1951. 130 pp. Price, $3.50.

This book is a classic in the development of basic knowledge of medicine and immunology, and it is remarkable that a book originally published 45 years ago should still be a valuable reference today. The careful observations, the explanations considered, the planned studies to clarify the meaning of the primary observations, and the care used in drawing conclusions provide a model that might well be followed more closely by present day investigators. The value is enhanced by the addition of a selected bibliography of more recent publications on the subject.

The publishers have rendered a real service in making this work generally available, and Dr. Schick is to be thanked for making the translation.

It is highly recommended for those who like to consult original sources, and it will be a constant source of pleasure and repeated reference for those working in the field of immunology.

RALPH S. MUCKENFUSS

BOOKS RECEIVED

Listing in this column acknowledges the receipt of books and our appreciation to the senders. Space and the interests of readers will permit review of some, but not all, of the books listed.

ADVANCES IN BIOLOGICAL AND MEDICAL PHYSICS. Vol. II. John H. Lawrence and Joseph G. Hamilton. New York: Academic Press, 1951. 348 pp. Price, $7.80.

ANNOTATED BIBLIOGRAPHY OF VITAMIN E—1940 to 1950. New York: National Vitamin Foundation, 1950. 184 pp. Price, $3.00.

BETTER HEALTH THROUGH BETTER RICE. Williams-Waterman Fund. New York: Research Corporation, 1950. 35 pp.

THE BIOCHEMISTRY OF INOSITOL. Bibliographic Series. Bulletin No. 6. Edward R. Weidlein, Jr. Pittsburgh: Mellon Institute of Industrial Research, 1951. 53 pp. Free.

BIOMETRIC ANALYSIS. An Introduction. Alan E. Treloar. Minneapolis: Burgess Publishing, 1951. 251 pp. Price, $4.50.

CANCER AS I SEE IT. Henry W. Abelmann. New York: Philosophical Library, 1951. 100 pp. Price, $2.75.

CHECK — COMMUNITY HEALTH EDUCATOR'S COMPENDIUM OF KNOWLEDGE. Clair E. Turner. St. Louis, Mo.: Mosby, 1951. 266 pp. Price, $3.00.

CORNELL CONFERENCES ON THERAPY. Vol. IV. Harry Gold, Managing Editor. New York: Macmillan, 1951. 342 pp. Price, $3.50.

EDUCACION HIGIENICA (In Spanish) (2nd ed.). Manuel Gonzalez Rivera. Mexico, D.F., 1950. 422 pp. Price, $1.50.

DIRECTORY OF INTERNATIONAL SCIENTIFIC ORGANIZATIONS. Paris: UNESCO, 1950. 224 pp.

DIMENSIONAL ANALYSIS FOR STUDENTS OF MEDICINE. Harold A. Abramson. New York: Josiah Macy, Jr., Foundation, 1950. 41 pp. Price, $1.00.

FLORENCE NIGHTINGALE. Lucy Seymer. New York: Macmillan, 1951. 154 pp. Price, $1.75.

HANDBOOK OF DIAGNOSIS & TREATMENT OF VENEREAL DISEASES (4th ed.). A.E.W. McLachlan. Baltimore: Williams & Wilkins, 1951. 368 pp. Price, $4.50.

AN INTRODUCTION TO STATISTICAL ANALYSIS. Wilfrid J. Dixon and Frank J. Massey, Jr. New York: McGraw-Hill, 1951. 370 pp. Price, $4.50.

AN INTRODUCTION TO UNIVERSAL SEROLOGIC REACTION IN HEALTH AND DISEASE. Reuben L. Kahn. New York: Commonwealth Fund, 1951. 155 pp. Price, $3.50.

MASS BCG VACCINATION IN CZECHOSLOVAKIA 1948–1949. Czechoslovak Ministry of Health, Danish Red Cross, Norwegian Relief for Europe, Swedish Red Cross and U.N. International Childrens Emergency Fund. Copenhagen, Denmark: International Tuberculosis Campaign, 1950. 103 pp.

NATURE AND HUMAN NATURE. Lawrence K. Frank. New Jersey: Rutgers University Press, 1951. 175 pp. Price, $3.00.

NEW WAYS TO BETTER MEETINGS. Bert and Frances Strauss. New York: Viking Press, 1951. 177 pp. Price, $2.95.

ORGANIZED HEALTH SERVICES IN A RURAL COUNTY (Monangalia County, West Virginia). Milton I. Roemer and Ethel A. Wilson. Washington: Federal Security Agency, Public Health Service, 1951. 144 pp.

PARENT GROUPS AND SOCIAL AGENCIES. The Activities of Health and Welfare Agencies with Groups of Parents of Handicapped Children in Chicago. Joseph H. Levy. Chicago: University of Chicago Press, 1951. 103 pp.

PERSPECTIVES IN HUMAN MALNUTRITION. Joseph Gillman and Theodore Gillman. New York: Grune & Stratton, 1951. 484 pp. Price, $18.00.

PIONEER DOCTOR. Lewis J. Moorman. Norman, Okla.: University of Oklahoma Press, 1951. 252 pp. Price, $3.75.

A PRIMER FOR PSYCHOTHERAPISTS. Kenneth Mark Colby. New York: Ronald Press, 1951. 167 pp. Price, $3.00.

PSYCHIATRIC ASPECTS OF JUVENILE DELINQUENCY. L. Bovet. Geneva: World Health Organization, 1951. 92 pp. Price, $1.00.

SOCIAL WORK AND SOCIAL LIVING. Bertha Capen Reynolds. New York: Citadel Press, 1951. 192 pp. Price, $2.50.

SOMATIC DEVELOPMENT OF ADOLESCENT BOYS. Herbert R. Stolz and Lois Meek Stolz. New York: Macmillan, 1951. 557 pp. Price, $9.00.

A STUDY OF COMBINATION SERVICES IN PUBLIC HEALTH NURSING. Dorothy Rusby. New York: National Organization for Public Health Nursing, 1950. 55 pp. Price, $1.25.

YOUR HEALTH. Dean Franklin Smiley and Adrian Gordon Gould. New York: Macmillan, 1951. 555 pp. Price, $4.50.

YOUR SINUS TROUBLES AND TREATMENTS. Friedrich S. Brodnitz. New York: Abelard Press, 1951. 243 pp. Price, $2.50.

Public Health in Foreign Periodicals

GEORGE ROSEN, M.D., Ph.D.

THIS is the second and concluding installment of a survey of recent public health items in Italian periodicals. The first part appeared in the April issue of the *Journal*.

POLIOMYELITIS PROBLEMS

An epidemic of poliomyelitis occurred in 1948 in Venice. Pavan and Frizziero describe this episode.[1] Throughout the year 72 cases were reported. Of these, 58 occurred from April through August. The peak was reached in June and July. The first cases appeared in widely separated parts of the city, but in March and April definite foci became apparent. The majority of cases occurred between the ages of 5 months and 5 years. Various hypotheses on the transmission of the disease are discussed, but it is the feeling of the authors that the investigation of carriers is most likely to yield practical results.

The transmission of poliomyelitis is also discussed by Bernstein.[2] The basis of this discussion is provided by a recent epidemic that occurred on the island of Malta. The author proposes the hypothesis that the poliomyelitis virus may have been transmitted by means of dried milk and that the virus may live as a parasite on some of the bacteria found in milk, especially in the cream.

A VIRAL AGENT IN HUMAN LEUKEMIA

The point of departure for the experimental researches reported by Magrassi and his coworkers is the idea that human leukemia may be considered in some way related to a viral etiology.[3] By injecting cellular materials taken from human beings into guinea pigs, these investigators succeeded in producing a characteristic fatal condition. The animals exhibited a marked decline in red blood cells, loss of hair and atrophy of the skin, extensive degenerative changes in the internal organs, and marked proliferative changes of the reticuloendothelial system in the spleen and lymph-nodes. The authors believe they have clear evidence that these changes are due to a transmissible agent of a viral nature. It is planned to continue these experiments.

Q FEVER IN SAN MARINO AND BOLOGNA

During the latter part of December, 1949, an outbreak of Q fever occurred in a viral district of San Marino.[4] Out of the 57 inhabitants, 22 were affected. In most cases, the disease first appeared clinically as a form of influenza. The diagnosis was confirmed by complement-fixation. On the basis of such examinations among apparently healthy individuals, it is believed that the disease had previously appeared sporadically in San Marino.

Sarcia deals with endemic brucellosis in the province and City of Bologna.[5] From January, 1941, to December, 1948, the City of Bologna had 506 cases out of 899 in the province. He reports the results of the intrapalpebral reaction to brucellin performed in the spring and summer of 1949. The author also comments on the particular topographic situation of the region of Emilia, to which flocks came from the Po River plains thus creating endemic foci. Bovine abortion is to be considered an alarm signal, but the question of carriers must also be taken into account. It is proposed, therefore, whenever indicated to look for carriers among food handlers.

ALCOHOLISM IN VENICE

Zanaldi calls attention to the problem of alcoholism in Venice.[6] Pointing out the large consumption of wine, he indi-

cates the grave economic, social and medical consequences (e.g., cirrhosis, polyneuritis, mental disorders). To deal with the situation it is proposed that aid be provided in the form of treatment, education, and rehabilitation for persons suffering from alcoholism.

TUBERCULOSIS IN SAN MARINO

In this study of tuberculosis in the tiny Republic of San Marino, Valli and Dominici first discuss tuberculosis mortality from 1908 to 1947.[7] San Marino has 12,000 inhabitants, of whom 8,600 live in scattered houses in the country, while the remaining 3,500 live in small towns and villages. Hygienic conditions leave much to be desired. Agriculture is the chief occupation. Industrial labor is absent. From 1908 to 1947 there were 539 deaths from all forms of tuberculosis. There were two peaks, however, in the mortality curve, in 1913–1927 and in the period 1938–1947. These are explained in terms of the First and Second World Wars and of post-war conditions. Familial infection is high. Anti-tuberculosis measures were not really undertaken until 1938. The establishment of a Tuberculosis Control Service made it possible to obtain figures on the incidence of the disease. This was determined for pulmonary tuberculosis over the decade 1938–1947.

TUBERCULOSIS IN ITALY

The importance of tuberculosis as a public health problem in Italy has already been indicated. While the mortality from the disease has been declining for many years, this trend was interrupted in World War II. Mostardini subjected this development to detailed analysis.[8] The rise reached its peak in 1944–1945 and then began to descend again.

Interest in the tuberculosis problem has always been active in Italy. Case finding is recognized as an effective control method. Clemente describes the Roentgenographic Service of the Italian Armed Forces.[9] This Service is linked to the Statistical Department of the Roentgenographic Center of the High Commissariat of Health. Each branch of the armed forces (Army, Navy, Air) has its own peripheral network of stations where individual and mass x-ray work is done.

Salvati reports on the experience with serial x-ray examinations at the military hospital of Taranto during the period 1946–1950.[10] Included in these examinations were military personnel already in service, conscripts, and volunteers. Out of 1,648 volunteers examined in 1949 and 1950, 64 were found to have some pathological condition. Six had active tuberculosis, 1 was inactive, 12 had pulmonary calcifications, 28 exhibited evidence of previous pleurisy, and 17 other thoracic conditions. Of 1,864 conscripts examined, 77 were found with pathological conditions. Eighteen had active tuberculosis, 8 had inactive tuberculosis, 21 exhibited calcifications, 25 showed signs of having had pleurisy, and 5 were found to have other pulmonary or thoracic condition. Salvati emphasizes the great value of such examinations.

Vaccination against tuberculosis is a subject of deep interest in Italy. Buonomini reports on the experimental vaccination of guinea pigs using *Anatubercolina Petragnani* in the form of an ointment.[11] Vaccination was performed by the multiple puncture method of Rosenthal-Birkhaug. According to the author this produced a definite allergic state and a degree of immunity.

Jemma reports a follow-up study on a group of boys who had received the Petragnani-Salvioli vaccination 10 years earlier.[12] He does not come to a definite conclusion as to the value of the vaccination.

An important element in dealing with the tuberculosis problem is social assistance. Reggiani and Caronzi discuss

this problem for Venezia Giulia and Veneto and point out what still needs to be done.[13] Among the proposals, serial x-ray examination of school children, and the creation of institutions for the treatment of childhood tuberculosis occupy a prominent place. The authors emphasize the need for a broadly conceived preventive program.

SOCIAL ASPECTS OF SUICIDE

Interest in the social aspects of health and disease has long been a characteristic of Italian medicine. Carnevali discusses suicide as a social problem with particular attention to the influence of the press.[14] The author feels that the press can help to provide a social prophylaxis for suicide. On the basis of statistical data it is shown that deaths due to suicide increased rapidly following the last war as they had done after the First World War, and that this phenomenon occurred essentially in the large cities. It is pointed out that publication of newspaper items about suicide may well create a psychological atmosphere in which self-destruction is made easier for certain people. These items need not be completely suppressed, but should be deprived of all sensational embellishments.

PREMARITAL EXAMINATIONS

Rivosecchi emphasizes the importance of premarital examinations.[15] He calls attention to laws on this subject that have been passed in various countries including the United States, and insists on the need for such action in Italy.

OCCUPATION AND HEALTH IN ITALY

Among the social factors to which Italian medicine has devoted a great deal of attention, occupation has long been prominent. This interest manifests itself in the many and diverse papers published on occupational health.

Mauro investigated the longshoremen at the port of Naples, and found a high prevalence of respiratory and rheumatic disorders.[16] A similar finding was observed among workers in the ports of Venice and Catania. The high morbidity is attributed to the effect of the environment in which the workers are employed, particularly the presence of a great deal of dust in the air.

Cortese stresses the importance of case finding among workers and their families for the control of syphilis.[17]

Recent Italian studies on lead poisoning are reviewed by Vigliani.[18] Particular attention is given to the pathology and therapy of lead poisoning. Vigliani points out that many cases have occurred among workers in automobile plants.

A specific report on workers employed in filing automobile bodies is provided by Barbaso.[19] Several hundred workers were examined periodically from 1946 to 1949. In this group 33 cases of lead poisoning were found. The distribution of various symptoms was as follows. All had anemia. The average red cell count was 3,200,000 and the average hemoglobin was 66 per cent (Sahli). Increased coproporphyrinuria was found in 26 cases (79 per cent), lead line in 22 (61 per cent), basophilic stippling in 21 (60 per cent), abdominal and gastric troubles in 21 and 16 cases respectively, lead colic in 6, lead hypertension in 4 cases, and lead palsy in 1 case. Barbaso stresses the danger of filing automobile bodies by means of rotating brushes and grinding machines. In discussing prevention, it is proposed that filing by mechanical means be discontinued and that this operation be done by hand.

PREVENTION OF OCCUPATIONAL DERMATOSES BY BARRIER CREAMS

During the period 1944–1948, the workers in the turning shop of a large engineering plant, who are exposed to cutting oils and various chemicals, presented numerous dermatoses.[20] The incidence of acne and folliculitis varied between 10.7 and 13.4 per cent. Among the workers in the chromium plating

department, ulcers and chromium dermatitis occurred in 8–11.6 per cent. In the varnish spraying department 17.9–22.4 per cent of the workers exhibited a skin condition resembling eczema. In 1949, the workers in these 3 units began to use barrier creams and continued to do so for the next 6 months. At the end of this period, no workers in the chromium-plating and varnishing units showed any skin disorders, and in the turning shop only 2 per cent of the workers suffered from folliculitis as compared with 10 per cent before the trial. As a result of this success, the use of such creams was adopted as a preventive measure in these departments. The author feels that the use of barrier creams is the most practical preventive measure against occupational contact dermatitis.

EFFECT ON WORKERS OF A HOT, DAMP ENVIRONMENT

A group of 100 workers employed in a hot, damp environment (the machine room of food paste factories) were subjected to clinical and laboratory examination.[21] The latter consisted essentially of tests for liver and kidney function. Moderate hypertension was found in 21 per cent of the group, marked hypertension in 3 per cent. This latter group were all young people who had been employed for only a short time. In 12 per cent of the cases, enlargement of the liver was found, with the lower edge of the liver extending about two fingerbreadths below the costal arch. In no cases were hematuria or glycosuria found. The investigators feel that these findings may be related to the working environment.

SILICOSIS AMONG QUARTZITE WORKERS IN NORTHERN ITALY

A clinical and radiological survey was made among the workers of 16 companies in northern Italy, that either extract, grind, or use quartzite in manufacturing.[22] During a 2 year period 583 workers were examined. The evolution of the cases was studied radiologically over a 10 year period. One hundred and seven cases of silicosis and 24 cases of pulmonary tuberculosis were found. In quartzite workers, silicosis assumes a rapid and serious form, the rapidity and gravity of development depending on the type of work performed. Grinding is the most dangerous job. The investigators describe the various types of silicosis found in different jobs. They point out that silicosis caused by quartzite creates more invalidity than other forms of this disease. Some prevention has been undertaken through the use of exhaust machinery and the complete enclosure of machines, but more needs to be done.

SILICOSIS AND TUBERCULOSIS AMONG WORKERS IN FOUNDRIES

Zanetti and Dompè report on the incidence of silicosis and tuberculosis from 1940 to 1948 among foundry workers.[23] A total of 13,560 workers from 33 steel plants was examined. Pulmonary changes due to dust (reticulation and silicosis) were noted in 10.5 per cent of the cases. Silicosis was found to be more frequent among workers engaged in sandblasting and removal of core sand. Tuberculosis lesions were observed in 2.75 per cent of the group. The highest incidence of silicosis and tuberculosis was found in older workers, and among those who had the longest occupational history of employment in a foundry.

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19. Barbaso, Enzo. Sul saturnismo nella lavorazione delle carrozerie di automobili, *La Medicina del Lavoro* 41: 86–95, 1950.
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A SELECTED PUBLIC HEALTH BIBLIOGRAPHY WITH ANNOTATIONS

RAYMOND S. PATTERSON, PH.D.

Not To Be Missed—It is beyond belief that any reader of these errant lines can be so submerged in his own scientific preoccupations that he will not be delighted by this statistical excursion into the current probabilities of each of us surviving the particular stage of his life's span in which he finds himself. Incidentally, your probabilities improve as time moves along.

ANON. The Chances of Reaching Life's Milestones. *Statist. Bull. Metrop. Life Insur. Co.* 32, 2:1 (Feb.), 1951.

You Never Hear about This—In the Scandinavian countries socialized medicine really works. There medical standards have not deteriorated, the doctors are well paid and like the system, the people get good medical care and are satisfied with what they get—or so this paper tells us. Whether systems that can succeed in law-abiding, humanitarian, socially responsible Scandinavia would work in this racket-ridden land of ours is yet to be demonstrated.

DICH, J. S. Why Social Medicine Has Succeeded in the Scandinavian Countries. *Pediatrics* 7, 2:247 (Feb.), 1951.

A Clean Tooth, etc.—For two years some school children brushed their teeth twice a day under the watchful eyes of school teachers, the controls didn't. The results indicate that that kind of brushing helps to reduce decay. The youngsters who used ammoniated dentifrices had just enough better results to provide some dubious ammunition for the advertisers.

KERR, D. W., and KESSEL, R. G. Two-Year Caries Control Study Utilizing Oral Hygiene and an Ammoniated Dentifrice. *J. Am. Dent. A.* 42, 2:180 (Feb.), 1951.

When It's Not Too Much Trouble—Study of the utilization of medical services by a wage-earning population leads to the conclusion that availability of treatment facilities induces people to seek medical care that otherwise they would not get. Seems reasonable!

DOWNES, J., and JACKSON, E. H. Medical Care Among Males and Females at Specific Ages—Eastern Health District of Baltimore 1938–1943. *Milbank Mem. Fund Quart.* 29, 1:5 (Jan.), 1951.

Converging on One Center—In Philadelphia, an aggressive v.d. case finding project was centered on areas where prevalence is high—the densely populated parts. Publicity was concentrated on tabloids, car cards, and sound trucks. Relative effectiveness of methods used will be reported upon later.

GUMPERT, G., *et al.* Venereal Disease Case Finding in High Prevalence Areas. *J. Ven. Dis. Inform.* 32, 3:60 (Mar.), 1951.

Man's Nearest Neighbor—Proverbially a cellar dweller, the New York rat has gone upstairs. Two pictures taken in Harlem (population density 80,000 per square mile) are eloquent evidence of the need for the city's rat control program. An amusing side-lines comment appears in "The Talk of the Town" section of the March 24th *New Yorker* Magazine.

HARDENBERGH, W. A., and WEINSTEIN, J. J. Rat Control in New York City. *Modern San.* 3, 3:12 (Mar.), 1951.

A Call for Teamwork—There is so much in this paper about the public health attack upon the various forms of heart disease that justice cannot be done to the discussion here, so part of one sentence is plucked for you from among the wealth of ideas: "A well-balanced program of education, case finding, and services for treatment and rehabilitation developed jointly by the practicing physician, the health officer, the hospitals, *and the voluntary health agencies* is necessary. . ." (Italics mine).

HILLEBOE, H. E., and BRIGHTMAN, I. J. The Public Health Aspects of Heart Disease. *New York State J. Med.* 51, 3:341 (Feb. 1), 1951.

Establishing a Base Line—We argue pretty learnedly about the need for more adequate rural health facilities and services but we know little about the use made of those that do exist. Well, in these counties surveyors went out and asked the people what they knew about their available health facilities and what use they made of them. The findings will please you.

LARSON, O. F., *et al.* Family Utilization of Health Resources in Rural Areas. *New York State J. Med.* 51, 3:335 (Feb. 1), 1951.

A Little Test—In its first phase, public health was regulation. Early in this century came the second phase, service. Now there is emerging the third phase, education. Health education is working with people, assisting them to direct their energies and activities toward better health for themselves and their communities. If the above is "just a lot of words" to you, then *please* hunt out this paper: it will do you a world of good.

LARRIMORE, G. W. Coordination of the Health Education Program and What Makes It Click. *New York State J. Med.* 51, 3:353 (Feb. 1), 1951.

Useful Summarization — Cutting sugar intake, fluoride therapy, cleaning after eating—using ammonia-urea compounds—and periodic dental care, all help to control caries. A good balanced diet doesn't.

MASSLER, M. Present Status of Caries Control. *G. P.* 3, 3:32 (Mar.), 1951.

Miracle—"Over the dead bodies" of nurses, obstetricians, even pediatricians, a compulsory rooming-in plan was put into effect. After caring for 2,067 in-

fants (throughout a 3 year period) the babies, their mothers, and grandmothers, the nurses, obstetricians, and pediatricians were found to like the arrangement.

McBRYDE, A. Compulsory Rooming-In in the Ward and Private Newborn Service at Duke Hospital. *J. A. M. A.* 145, 9:625 (Mar. 3), 1951.

Note Well—Outstanding is the increase in cardiovascular-renal mortality among white males (ages 35–64) in contrast to marked reductions in white females—and non-whites of both sexes.

MORIYAMA, I. M., and WOOLSEY, T. D. Statistical Studies of Heart Disease. *Pub. Health Rep.* 66, 12:355 (Mar. 23), 1951.

T B Is First—Just seven causes of death are the seven reasons Negro death rates exceed white. Can you name them? This statistical study reveals the effect of regional and urbanizational influences upon the important seven.

PENNELL, M. Y., and GOVER, M. Negro Mortality. *Pub. Health Rep.* 66, 10:295 (Mar. 9), 1951.

From Over the Border—Five cents of every dollar of (Ontario) provincial revenue is spent on mental hospital services. Among permanent members of the public service 27% are employed in this work. There's a statistic for you! There are more and even better statistics in this, and the following paper.

PHILLIPS, M. Some Major Public Health Problems in Ontario (and) SMITH, C. Community Education for Mental Health. *Canad. J. Pub. Health* 42, 2:52 (Feb.), 1951.

Mixed Blessings—Another discussion of the way the (British) National Health Service Act has handicapped the public health efforts to control tuberculosis, by rigidly separating preventive and curative services.

SEMPLE, A. B. The Tuberculosis Problem. *Pub. Health* 64, 5:74 (Feb.), 1951.

This Will Floor You—Proper sanitation of home and community is still the public's (health) responsibility. Preventive medicine is not: it is an integral part of the everyday practice of medicine. Final steps in tuberculosis control will not be based on more mass case finding and broader institutional care; venereal disease clinics may soon be closed; the degenerative diseases are not the field for public health measures. Prepaid comprehensive medical care will take over these jobs.

SMILLIE, W. G. Medicine as a Social Instrument: Preventive Medicine. *New England J. Med.* 244, 9:329 (Mar. 1), 1951.

Caution the Watchword Here—A recent *A. J. P. H.* editorial asked, What Are We Waiting For? Well, one thing we are waiting for is the South Jersey Association of Water Superintendents. That august body is "agin" water fluoridation—or so it resolved.

SPENCER, W., and TYLER, R. L. South Jersey Superintendents Vote Against Fluoridation. *Waterworks Engineering* 104, 3:221 (Mar.), 1951.

What Children Die of—Prominence of rheumatic fever as a cause of children's deaths is due to a fall in incidence of other causes, not to an increase in that disease—for it, too, is declining. Revealing regional statistics are spread before you but the really arresting figures lie in the dreadful harvest of accidents everywhere.

WOLFF, G. Death Toll From Rheumatic Fever in Childhood. *J. A. M. A.* 145, 10:719 (Mar. 10), 1951.

ASSOCIATION NEWS

SEVENTY-NINTH ANNUAL MEETING
AMERICAN PUBLIC HEALTH ASSOCIATION
SAN FRANCISCO, CALIF., OCTOBER 29–NOVEMBER 2, 1951

FELLOWSHIP IN THE AMERICAN PUBLIC HEALTH ASSOCIATION

The grade of Fellowship was established in the American Public Health Association in 1922. Professional workers in public health are eligible for election as Fellows under certain conditions and as an indication that they have achieved a recognized professional standing. As of January 1, 1951, the total membership of the Association was 12,253, including 2,426 Fellows, or 19 per cent of the total.

Questions are frequently asked regarding the requirements for Fellowship and the following statement outlines the provisions of the By-laws governing qualification and election.

Persons who have been members of the Association for at least two years and who have reached their 30th birthday are eligible to apply if, in their opinion, they meet the conditions of one or more of the six clauses in the By-laws defining "an established professional standing." These six possible approaches are as follows:

a. A person who has rendered acceptable service for two or more years in a responsible public health position and who has been awarded in course a degree of Doctor of Public Health, Doctor of Science in Public Health, Doctor of Philosophy in Public Health, Doctor of Medicine with at least one year of graduate study in public health in a university, Master of Public Health, Diploma in Public Health, or other equivalent degrees, according to standards approved by the Executive Board of the American Public Health Association.

b. A person who has been awarded in course an academic or professional degree involving training in public health and who has been regularly engaged in health work for at least five years, having rendered meritorious service as a health officer or in responsible charge of work in either a public or private health agency.

c. A person who has done notable original work in public health or preventive medicine of a character to give him a recognized standing.

d. A person regularly engaged in health work for at least five years, who has given evidence of special proficiency, who has attained a recognized standing.

e. A teacher of public health or one of its constituent sciences who has attained distinction as an expounder of the principles of public health or its constituent sciences. Such a teacher shall have had at least five years' experience as a teacher of public health subjects. Any years of experience as defined in paragraphs "b" and "d" that the applicant may have had shall be considered the equivalent of the same number of years' experience as a "teacher."

f. A person not covered by the above, who has made substantial contributions to public health work in his chosen branch, who has attained a recognized professional standing.

Persons wishing to apply should request a Fellowship application blank from the American Public Health Association Membership Department, 1790 Broadway, New York 19, N. Y. Applications are accepted up to August 1 each year for consideration by the Governing Council at the fall meeting. It is important to make clear that members themselves should take the initia-

tive in submitting such applications. Neither the Sections nor the A.P.H.A. administrative staff are authorized to solicit applications. This means that, although over 3,000 persons have been duly recognized with this grade of affiliation since 1922, there are other persons well qualified who have never initiated the process of applying for Fellowships. It should be clear that members should not await action by others if they wish to attain Fellowship. It is necessary and proper for them to take the first step.

An application for Fellowship requires sponsorship by two Fellows of the Section with which the applicant desires to be affiliated. These personal signatures are to be obtained by the applicant before submitting the completed application. The A.P.H.A. office will assist, on request, in determining the Section with which prospective sponsors are affiliated. Applications from persons not wishing to be identified with a particular Section and requesting unaffiliated Fellowship may be sponsored by any two Fellows of the Association.

When properly sponsored and otherwise completed, the application is sent to the A.P.H.A. office, after which the list of persons applying is published in the *American Journal of Public Health*, usually in the September issue, but in any case not less than 15 days before the date for the Annual Meeting. An established routine is followed for review by the Section Councils (unaffiliated applications are reviewed by the Executive Board) and by the Committee on Eligibility. This Standing Committee of the Association is made up of one Fellow from each of the 13 Sections, plus a Chairman elected by the Executive Board. This group is under instructions from the Governing Council to examine each application in accordance with the provisions of the clause of the By-laws chosen by the applicant, and to apply the criteria with precision in each case. Final election is by the Governing Council at the second meeting at each annual session.

The privileges of Fellowship include eligibility to serve as an officer of the Association or one of the Sections, Chairman of an Association or Section Committee (over one hundred in number), a member of one of the four Standing Committees, a member of the Governing Council or Executive Board, and the right to vote on amendments to the Constitution. Some Civil Service and merit system records depend upon Fellowship in the American Public Health Association as an achievement deserving recognition in applicants.

The dues of Fellows are $12.00 annually, and include a subscription to the *American Journal of Public Health* and other services to which members are eligible. Life membership is available at $200, covering all future annual dues.

Applications for Fellowship to be considered at the 79th Annual Meeting in San Francisco, California, October 29–November 2, should be filed with the Association as soon as they are completed, and in any case not later than August 1. For further information, address the Membership Department, American Public Health Association.

Each Member and Fellow of the A.P.H.A. is urged to fill in and return promptly the Membership Directory information card that was sent with the recent Association Newsletter.

NOMINATIONS FOR THE GOVERNING COUNCIL

The Association Nominating Committee for Elective Councilors, consisting of a Chairman appointed by the Executive Board and one Fellow elected by each of the Sections, reports the following nominations for the Governing Council, in accordance with Section 2, Article VII, of the By-laws, which provides for publication of these names to the membership not less than five months before the Annual Meeting.

Margaret G. Arnstein, R.N.
Public Health Service, F.S.A.
Washington, D. C.

George Baehr, M.D.
Health Insurance Plan of Greater New York
New York, N. Y.

Leona Baumgartner, M.D.
City Health Department
New York, N. Y.

Theron H. Butterworth, Ph.D.
Public Health Service, F.S.A.
Washington, D. C.

John W. Fertig, Ph.D.
Columbia University
New York, N. Y.

Lester A. Gerlach, D.D.S.
City Health Department
Milwaukee, Wis.

Franz Goldmann, M.D.
Harvard University
Boston, Mass.

Harold B. Gotaas, Sc.D.
University of California
Berkeley, Calif.

Leonard Greenburg, M.D.
State Department of Labor
New York, N. Y.

Marjorie M. Heseltine, M.A.
U. S. Children's Bureau
Washington, D. C.

Robert H. Hutcheson, M.D.
State Department of Public Health
Nashville, Tenn.

Herbert R. Kobes, M.D.
University of Illinois
Springfield, Ill.

Edward G. McGavran, M.D.
University of North Carolina
Chapel Hill, N. C.

Ella E. McNeil, R.N.
University of Michigan
Ann Arbor, Mich.

Dorothy Nyswander, Ph.D.
University of California
Berkeley, Calif.

Eleanor E. Palmquist, R.N.
University of Oregon
Portland, Ore.

Ruth R. Puffer, Dr.P.H.
State Department of Public Health
Nashville, Tenn.

Guy V. Rice, M.D.
State Department of Public Health
Atlanta, Ga.

William M. Schmidt, M.D.
Harvard University
Boston, Mass.

William H. Sebrell, Jr., M.D.
National Institutes of Health
Bethesda, Md.

John W. Shackelford, M.D.
State Health Department
Oklahoma City, Okla.

Morris F. Shaffer, Ph.D.
Tulane University
New Orleans, La.

James S. Simmons, M.D.
Harvard University
Boston, Mass.

Nathan Sinai, Dr.P.H.
University of Michigan
Ann Arbor, Mich.

Charles E. Smith, M.D.
University of California
Berkeley, Calif.

Franklin H. Top, M.D.
University of Minnesota
Minneapolis, Minn.

Section 3 of Article VII of the By-laws states that "Upon the petition of twenty-five Fellows, the Nominating Committee shall add the name of any Fellow to the nominees selected by it, provided such petition is received not less than three months before the annual meeting." This means that names will be added to the above list if properly supported by petition and received in the Administrative Office not later than July 29.

Official ballots containing the names of the above nominees and any added by petition will be mailed to all Fellows and members in good standing early in August. The ten nominees receiving the highest number of votes on the ballots cast by the Fellows and members will be declared elected to the Governing Council for a three year term expiring in 1954. This will be the first occasion in which the voting privileges for elective members of the Governing Council have been extended to members of the Association.

The members of the 1951 Nominating Committee for Elective Councilors are:

Lucy S. Morgan, Ph.D., *Chairman*
Warren A. Cook, representing Industrial Hygiene Section
Edwin F. Daily, M.D., representing Medical Care Section
James A. Doull, M.D., representing Epidemiology Section
Louisa J. Eskridge, representing Public Health Education Section
John T. Fulton, D.D.S., representing Dental Health Section
Lloyd M. Graves, M.D., representing Health Officers Section
Nell Hirschberg, Ph.D., representing Laboratory Section
Marie L. Johnson, representing Public Health Nursing Section
S. S. Lifson, representing School Health Section
Sol Pincus, representing Engineering Section
Horace L. Sipple, Ph.D., representing Food and Nutrition Section
Alan E. Treloar, Ph.D., representing Statistics Section
Myron E. Wegman, M.D., representing Maternal and Child Health Section

OFFICIAL ACCEPTANCE OF PLATING MEDIA FOR THE AGAR PLATE METHOD

The policy followed in editions previous to the current revision of *Standard Methods for the Examination of Dairy Products*, as promulgated by the American Public Health Association, was generally to identify each complex ingredient of a digest or extract nature by a distinctive name, followed by the manufacturer's trade name "Bacto," with the proviso that "other brands giving equivalent results" might be substituted for the trade name brand. "Bacto" is the trade name on such products manufactured by Difco Laboratories, Inc., Detroit 1, Mich. In addition, the analyst was permitted to substitute for the medium prepared from the authorized ingredients a dehydrated Bacto medium compounded from such ingredients or any other compounded dehydrated medium which would give equivalent results.

In previous editions, no responsibility was assigned to any person or organization for determining what the requirements of an equivalent ingredient or of an equivalent dehydrated medium would be. In order that the responsibility for such determinations might be properly placed, the current ninth edition of *Standard Methods for the Examination of Dairy Products* contains the following:

> "Before official use as a basis for determining Standard Plate Counts, all ingredients alleged to give 'equivalent results' should have the unqualified approval for such use by appropriate Committees on Standard Methods of the American Public Health Association."

During 1949, the Laboratory Methods Committee of the International Association of Milk and Food Sanitarians made an organized comparison of the colony

productivity of several plating media, including Difco's Tryptone Glucose Extract Agar, dehydrated, No. B2, and the Trypticase Glucose Extract Agar, dehydrated, No. 183-B, manufactured by the Baltimore Biological Laboratory, Inc. (BBL), 1640 Gorsuch Ave., Baltimore 18, Md. Based upon the average counts and comparative deviation ranges from the mean, one could not escape the conclusion that the results obtained on the BBL medium were practically indistinguishable from those obtained on the Difco medium.

On Nov. 8, 1949, the Baltimore Biological Laboratory, Inc., asked the American Public Health Association for a formal "issuance of unqualified approval of our product by the appropriate Committees." The Committee on Research and Standards through its subcommittee then proceeded to make independent comparative studies to determine whether or not the previous observations could be duplicated. The results so obtained in 1950 confirmed those obtained in 1949.

Based upon the observations reported above, the Subcommittee on Standard Methods for the Examination of Dairy Products, A. H. Robertson, Ph.D., Chairman, recommending to the Coördinating Committee on Laboratory Methods on Nov. 1, 1950, that authorization be granted for the optional use of either Difco's Tryptone Glucose Extract Agar, dehydrated, No. B2 or BBL's Trypticase Glucose Extract Agar, dehydrated, No. 183-B as the official plating medium for determining the Standard Plate Count on milk and cream by the Agar Plate Method. The Coördinating Committee on Laboratory Methods acted favorably on the recommendation and referred it to the Committee on Research and Standards. On Feb. 20, 1951, the Committee on Research and Standards voted favorably on the action of the Coördinating Committee on Laboratory Methods.

Thus far, comparative determinations have been made on raw and pasteurized milk only. There is no reason to believe that optional use should not be extended to raw and pasteurized cream. Before use for plating milk and cream, one per cent of skim milk (fresh or freshly reconstituted, or sterilized stock thereof) should be added to the prepared medium. No determinations have been made by the subcommittee to establish independently the equivalent productive value of each BBL ingredient for possible interchangeable use with each Difco ingredient. In the interests of uniformity, it is recommended that a dehydrated form of medium be used.

I herewith acknowledge the receipt of the summarized recommendations of the Subcommittee on Standard Methods for the Examination of Dairy Products with approval of such recommendations by appropriate committees of the Association. On behalf of the Association, I hereby announce acceptance of the optional use of either of the two dehydrated media referred to above for making Standard Plate Counts on milk and cream by the Agar Plate Method effective Feb. 20, 1951.

REGINALD M. ATWATER, M.D.,
Executive Secretary

THE ASSOCIATION COMMITTEE ON CHILD HEALTH

Under the chairmanship of Samuel M. Wishik, M.D., the Association Committee on Child Health has had two recent meetings. On both occasions the meeting of the entire committee was preceded by a meeting of the Subcommittee on the Child Health Conference.

Work has continued on a statement concerned with health supervision of the well young child, with special reference to the child health conference. The statement will result from combined effort of the committee itself and of unofficial consultants from other groups, including the American Academy of

Pediatrics, the Association of Maternal and Child Health Directors, the Maternal and Child Health Section, A.P.H.A., the Children's Bureau and the National Association for Mental Hygiene, Inc. The committee itself has a wide inter-professional coverage, composed as it is of public health workers in the fields of pediatrics, social work, nursing, education, dentistry, psychiatry, and nutrition. (See list of members in *Year Book*.) It is the hope of the committee members that by early summer an edition of the statement will be ready for distribution among health workers for review and criticism.

The care of the handicapped child is the second chief concern of the committee. A list has been compiled of handicapping conditions for which it is believed statements are needed showing acceptable public health practices. An outline of topics which might serve as a guide to such statements has been prepared.

It is the plan of the committee to prepare such statements as far as possible through other organizations with specialized interests, supplementing in some cases where topics have not been covered. The committee itself will attempt the preparation of an overall statement on philosophies and practices which might apply to any handicapped child.

At the meeting of the committee at the end of March, attention was given to the part which public health workers might play in helping to safeguard the health of mothers and children during the present national situation. The committee realized that troubled conditions may continue for a long time and that spending for the care of children is important to the national defense; also that protection of family life has strong morale value. It was felt that in some instances better use could be made of present resources by replanning for greater efficiency. On the other hand, some activities do need expansion, and training and research programs need to be established.

A subcommittee under the chairmanship of Paul Harper, M.D., will undertake the following three tasks:

1. Recommendations concerning a maternity and infant care program for military dependents.
2. Statement of principles in protection of mothers and children in civilian defense planning and activities.
3. Detailed discussion concerning components of a maternal and child health program in respect to advisable modification or expansion.

RESOLUTIONS COMMITTEE FOR SAN FRANCISCO MEETING

William P. Shepard, M.D., President, has selected the following members of the Resolutions Committee to serve at the 79th Annual Meeting in San Francisco:

Malcolm H. Merrill, M.D.,
State Department of Public Health,
San Francisco, Calif., *Chairman*
Floyd C. Beelman, M.D.
George D. W. Cameron, M.D.
Lloyd Florio, M.D.
Myrtle Greenfield
William Griffiths, Ph.D.
Kathleen M. Leahy, R.N.
George T. Palmer, Dr.P.H.
Charles L. Senn

The suggested resolutions may be sent to the Committee at the Association office or directly to the Chairman, Dr. Merrill. As in the past, a resolutions box will be placed near the registration desk in the Main Arena of the Civic Auditorium, San Francisco, at the time of the Annual Meeting. The time for closing the box, as determined by the Executive Board, will be duly announced. It is of assistance to the committee to have resolutions submitted as far in advance as possible.

79TH ANNUAL MEETING

San Francisco, Calif., Oct. 29–Nov. 2, 1951

A HOUSING BUREAU has been organized for the 79th Annual Meeting of the A.P.H.A. in San Francisco, October 29 to November 2. Since all requests for rooms are handled in chronological order, it is recommended that you send in your application as quickly as possible.

PLEASE COMPLETE THE APPLICATION FORM ON PAGE 613 GIVING *ALL* INFORMATION REQUESTED.

HOTELS HOLDING ROOMS FOR A.P.H.A. AND RATES.

Map	*Hotel*	*Single*	*Double Rooms* *Double Bed*	*Twin Beds*
1	Alexander Hamilton *	$5.00–10.00	$ 6.00–10.00	$ 7.00–10.00
2	Bellevue *	5.00– 6.00	7.00– 8.00	7.00– 9.00
3	Beverly Plaza	4.50– 6.00	6.50– 8.00	6.50– 8.00
57	Biltmore	4.00–	5.00	6.00
4	Brayton	2.50– 3.00	3.00– 4.00	4.50– 5.00
6	Californian *	4.00– 5.80	6.00– 7.30	6.50– 8.30
7	Canterbury	4.00– 5.00	6.00	7.00– 8.00
8	Carlton	3.00– 3.50	5.00– 5.50	6.00
9	Cartwright	4.00– 5.00	6.00	7.00
10	Cecil	4.00– 5.00	5.00	6.50– 7.00
11	Chancellor	4.50–.	6.00	7.00
12	Clift *	7.00–12.00	9.00–15.00	10.00–18.00
59	Commodore	4.00– 5.00	6.00– 7.50	7.00– 8.50
15	Crest	3.00– 4.50	4.00– 5.50	5.50– 6.50
16	Devonshire *	4.00–	5.00	6.00
16	Drake Wiltshire *	5.00– 6.00	6.00– 7.00	8.00– 9.00
17	El Cortez	3.50– 6.00	4.50– 7.00	6.00– 8.00
18	Embassy	3.50–	4.00	5.00
19	Fairmont *	8.00–13.00	11.00–16.00	11.00–16.00
20	Fielding	4.00– 6.00	5.00– 8.00	6.00– 8.00
21	Franciscan	2.50– 4.00	4.00– 5.00	5.50– 6.00
22	Golden State	3.00– 3.50	4.00– 5.00	6.00
23	Governor	3.00– 3.50	4.00– 5.00	6.00
60	Harcourt	3.00– 3.50	3.50– 4.00	5.00
24	Herbert	3.50– 4.00	4.00– 5.00	5.00– 6.00
25	King George	3.00– 4.00	4.00– 5.00	5.00– 6.00
61	Lafayette	4.00–	5.00	6.00
62	Lombard	4.00– 6.00	5.00– 8.00	6.00– 8.00
27	Manx *	3.50– 4.00	4.50– 5.00	6.50
28	Mark Hopkins *	8.00–11.00	11.00–15.00	11.00–15.00
31	Olympic *	3.50– 6.00	4.50– 6.00	6.00– 8.00
32	Oxford	3.00– 4.00	4.00– 6.00	6.00
33	Palace *	6.00–12.00	9.00–14.00	10.00–15.00
63	Palomar	3.50– 5.00	4.00– 6.00	4.50– 6.00
34	Pickwick *	3.50– 5.00	4.50– 6.00	5.50– 6.50
35	Plaza	5.00– 6.00	6.50– 8.50	7.00– 9.00
38	Roosevelt	3.00– 4.00	3.50– 5.00	6.00
39	St. Andrews	3.00–	3.50– 4.00	5.00
70	St. Francis *	6.00–14.00	8.00–14.00	10.00–18.00
42	Senate	3.00– 4.00	4.00– 5.00	5.00– 6.00
43	Senator	3.00– 3.25	3.50– 3.75	4.50– 5.00
44	Shaw	3.50– 4.00	4.50– 5.00	6.00– 6.50
45	Sheldon	3.00– 4.00	4.00– 5.50	5.50
46	Sir Francis Drake *	6.50–11.00	8.50–13.00	10.50–15.00
47	Spaulding	3.00– 4.00	4.00– 5.00	5.00– 6.00
48	Stewart	3.50– 5.00	5.00– 6.00	6.00– 9.00
49	Stratford	3.00– 4.00	3.50– 6.00	5.00– 6.00
50	Sutter *	3.00– 4.50	4.50– 7.00	6.00– 8.00
64	Travelers	3.50– 4.00	5.00– 5.50	6.00
52	Victoria	3.50– 4.00	4.50– 5.00	5.00– 6.00
53	Whitcomb *	4.50– 7.00	6.00–10.00	7.00–10.00
55	Y.M.C.A. Hotel	1.30 up		2.60 up
56	York	3.00– 4.00	3.50– 5.00	5.00– 6.00

* Parlor suites available. Rates on request.

SCIENTIFIC EXHIBITS AT THE SAN FRANCISCO ANNUAL MEETING

The Committee on Scientific Exhibits is accepting applications for scientific exhibit space at the 79th Annual Meeting. Health departments, schools of public health, and voluntary agencies are invited to participate. Individual research projects may also be exhibited.

Applications for space may be obtained from the Association Office—1790 Broadway, New York 19.

HOTEL RESERVATION FORM

MAIL TO: A.P.H.A. Housing Bureau
Room 200, 61 Grove Street
San Francisco 2, Calif.

Single rooms are very scarce. Please indicate if you would be willing to share a twin-bedded room with another member.
Yes ..... No .....

PLEASE MAKE RESERVATIONS NOTED BELOW:

First Choice ..... Hotel
Second Choice ..... Hotel
Third Choice ..... Hotel

Arrival: ....., at ..... a.m. ..... p.m.
Departure: ....., at ..... a.m. ..... p.m.

..... Single room @ $ .....
..... Double room @ $ .....
..... Twin-bedded room @ $ .....
..... Parlor, bedroom suite @ $ .....

NAMES OF ALL OCCUPANTS:

.....
.....
.....

ADDRESSES:

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.....
.....

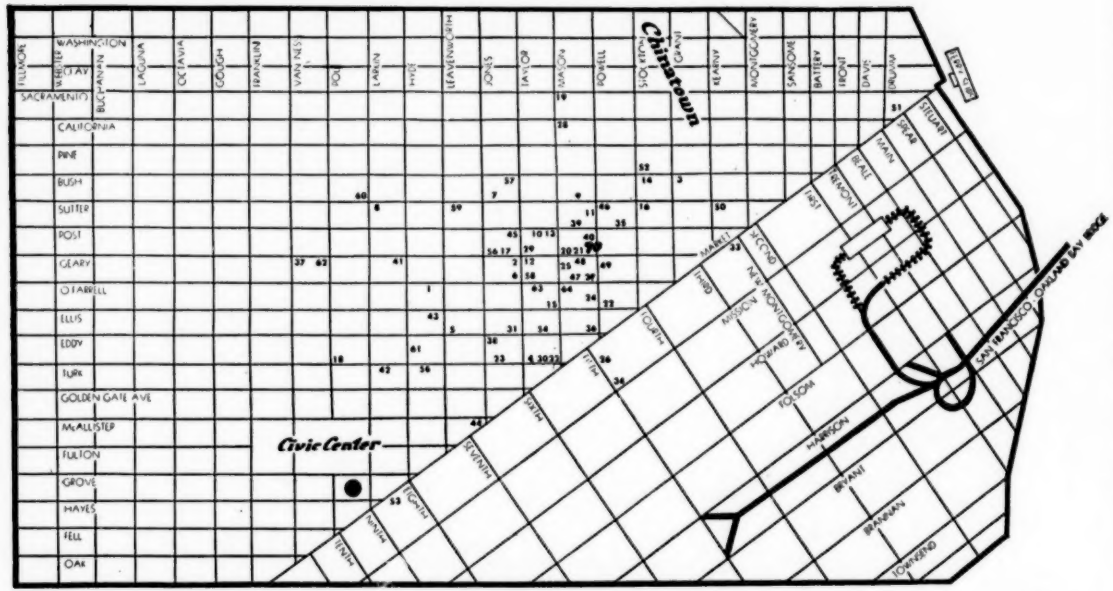
CHECK FOR $..... (MADE PAYABLE TO A.P.H.A. HOUSING BUREAU) IS ENCLOSED TO BIND THIS RESERVATION.

MAIL CONFIRMATION TO: Signed: .....

Address: .....
City Zone State

A STAMPED, SELF-ADDRESSED ENVELOPE WOULD BE APPRECIATED.

Street Plan of San Francisco Showing Location of Housing Bureau Hotels



Hotel Reservation form is on the reverse side. Please indicate your first, second, and third choice hotel. Single rooms are limited.

All reservations will be confirmed if requests are received not later than October 15.

ALL REQUESTS MUST BE ACCOMPANIED BY A DEPOSIT CHECK of $5 per person, or $10 per room, made PAYABLE TO THE A.P.H.A. HOUSING BUREAU. The deposit holds the room on your arrival day, regardless of the hour, and will be credited to your account. PLEASE DO NOT SEND U. S. POSTAL NOTES OR CASH.

Key

1 Alexander Hamilton
2 Bellevue
3 Beverly Plaza
57 Biltmore
4 Brayton
5 Cadillac
6 Californian
7 Canterbury
8 Carlton
9 Cartwright
58 Casa Nova
10 Cecil
11 Chancellor
12 Clift
59 Commodore
14 Court
15 Crest
16 Devonshire
16 Drake Wiltshire
17 El Cortez
18 Embassy
19 Fairmont
20 Fielding
21 Franciscan
22 Golden State
23 Governor
60 Harcourt
24 Herbert
28 Huntington
25 King George
61 Lafayette
26 Lankershim
62 Lombard
27 Manx
28 Mark Hopkins
30 New Dalt
31 Olympic
32 Oxford
33 Palace
63 Palomar
34 Pickwick
35 Plaza
36 Powell
37 Richelieu
38 Roosevelt
39 St. Andrews
70 St. Francis
41 San Carlos
42 Senate
43 Senator
44 Shaw
45 Sheldon
46 Sir Francis Drake
47 Spalding
48 Stewart
49 Stratford
50 Sutter
51 Terminal
64 Travelers
52 Victoria
53 Whitcomb
54 William Penn
55 Y.M.C.A. Hotel
56 York

ADVANCE REGISTRATION

FOR 79TH ANNUAL MEETING

AMERICAN PUBLIC HEALTH ASSOCIATION

SAN FRANCISCO, CALIF., OCTOBER 29–NOVEMBER 2, 1951

Members and Fellows of the American Public Health Association and other health workers who are not members who wish to register in advance for the San Francisco Annual Meeting are cordially invited to do so.

Each person should fill in the coupon below or a facsimile thereof and mail it with the registration fee to the Central Office. We will prepare for your attendance in advance and you can then pick up your program and badge without delay at a special section as soon as you arrive at Registration Headquarters in the Civic Auditorium. At that time your registration will have been recorded and it will only be necessary for you to supply your local hotel and room number to complete the registration procedure. If you know now at which hotel in San Francisco you will be staying, please add this information below.

Advance registrations cannot be accepted and recorded if received in Central Office after October 1, 1951.

Return to American Public Health Assn.,
1790 Broadway, New York 19, N. Y.

I wish to register in advance for the San Francisco Annual Meeting.

NAME .....

BUSINESS ADDRESS .....

CITY & STATE .....

TITLE OF POSITION .....

HOTEL IN SAN FRANCISCO .....

Non-member of A.P.H.A. Registration fee $4. ☐

Member of A.P.H.A. Registration fee $3. ☐

Fellow of A.P.H.A. Registration fee $3. ☐

Please send check or money order for amount shown

If you will be accompanied by your wife (or husband) or other dependent member of your family who is entitled to free registration, please list the name and address below:

NAME ..... RELATIONSHIP TO DELEGATE .....

STREET ADDRESS ..... CITY & STATE .....

APPLICANTS FOR MEMBERSHIP

The following individuals have applied for membership in the Association. They have requested affiliation with the sections indicated.

Health Officers Section

Angel Antonio Arce, M.D., Public Health Unit, Utuado, Puerto Rico, Chief Health Officer

Garry G. Bassett, M.D., 1397 Warren Rd., Lakewood 7, Ohio, Health Commissioner

Francisco Berio-Suarez, M.D., Comerio, Puerto Rico, Health Officer, Puerto Rico Dept. of Health

Jose Betances, M.D., Palmer No. 5, Guayama, Puerto Rico, Medical Director of Tuberculosis Center, Dept. of Health

David T. Blake, Board of Health, Princeton, N. J., Health Officer

A. R. J. Boyd, M.D., C.M., D.P.H., City Building, Kingston, Ont., Canada, Medical Officer of Health

Oscar A. Burton, M.D., 67 Main St., Brattleboro, Vt., Health Officer

Maurice Campagna, M.D., 1205 Richards Bldg., New Orleans, La., Director, Bureau of Tuberculosis Control, Health Dept.

E. John Cram, M.D., C.M., D.P.H., P. O. Box 226, Immigration Bldg., St. John, N. B., Canada, Medical Officer in Charge, Dept. of National Health and Welfare

E. B. Headley, M.D., Health Dept., Wilmington, Ohio, Health Commissioner

R. Sherwin Johnston, Jr., M.D., 103 W. 2nd, La Junta, Colo., Public Health Officer, Otero County

Curtis P. McCammon, M.D., 309 Market St., Knoxville, Tenn., Director, Venereal Disease Control, Bureau of Health

Zack P. Mitchell, M.D., Cleveland County Health Officer, Shelby, N.C.

Perry C. Sanders, M.D., 149 St. Mildred's Court, Danville, Ky., Director, Boyle County Health Dept.

Donald B. Thurber, M.D., 7 E. 2nd St., Maysville, Ky., Director, Mason County Health Dept.

Jaime M. Vidal-Feliz, M.D., Cayey Tuberculosis Hospital, Cayey, Puerto Rico, Director

Mary L. Witmer, 248 Seneca St., Oil City, Pa., Health Officer, Bureau of Health

Laboratory Section

Richard E. Amos, 549 Packard, Ann Arbor, Mich., Laboratory Technician, Ypsilanti State Hospital

Helen Broughton, The Dupray-Hodges Laboratory, 306 Hoke Bldg., Hutchinson, Kans., Medical Technologist

Robert P. Brueck, 3703 Meadowbrook Ave., Nashville, Tenn., Senior Bacteriologist, State Health Dept.

Elizabeth Butt, 1101 Church St., Waycross, Ga., Director, Waycross Branch Laboratory, State Dept. of Public Health

Phyllis Conner, 6945 S. Crandon, Chicago, Ill., Bacteriologist, Hektoen Institute for Medical Research

Lt. William E. Dye, M.S.C., Research & Development Branch, Fitzsimons Army Hosp., Denver 8, Colo., Bacteriologist, Research Station

Lourdes R. Espiritu, M.D., Institute of Hygiene, Herran St., Manila, Philippines, Instructor in Virology

Robert E. Evans, Ph.D., Medical Laboratory Bldg., Iowa City, Iowa, Asst. Director of Iowa State Hygienic Laboratory

Thomas F. Hall, Ph.D., Tennessee Valley Authority, Wilson Dam, Ala., Chief, Biology Section

Thomas S. Hosty, Ph.D., Dept. of Public Health, Montgomery 4, Ala., Director of Laboratories

Elinor Judd, 452 Park Drive, Boston 15, Mass., Director of Laboratories, Robert B. Brigham Hospital

Louis J. Katonak, M.A., City Health Dept., City Hall, Canton 2, Ohio, Bacteriologist

Lall G. Montgomery, M.D., Ball Memorial Hospital, Muncie, Ind., Director, Dept. of Pathology

Stanley Paslawski, Ph.D., 179A 8th St., Brooklyn 15, N. Y., Henry Heide, Inc.

Lt. Payne H. Percefull, M.S.C., 60th Station Hospital, Fort Dix, N. J., Officer, United States Army

Mary C. Westmoreland, 1029 Kentucky Ave., N.E., Atlanta, Ga., Bacteriologist, State Dept. of Public Health

Statistics Section

Dean E. Krueger, M.A., 746 E. 84th St., Chicago 19, Ill., Public Health Administrator, Div. of Public Health Methods, USPHS

Mary Sue Williams, M.S., 420 6th Ave., North, Nashville, Tenn., Junior Statistician, Dept. of Public Health

Engineering Section

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Paul Bauer, 84 Munoz Rivera Ave., Hato Rey,

Puerto Rico, Asst. Director, Hospital Survey and Construction Bureau, Dept. of Health

William O. Buettner, 30 Church St., New York 7, N. Y., Exec. Secy., National Pest Control Assn.

John M. Cook, 701 W. Markham, Little Rock, Ark., Sanitary Engineer, Little Rock Health Dept.

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Edward R. Hermann, 2118 B-44th St., Los Alamos, N. M., Chief of Public Health & Sanitation Branch, Army Educational Corps

Howard A. Johnson, Water, Gas & Electric Depts., Danville, Va., Supt., Water Purification

Gordon M. Larson, Public Health Service, Room 5074, F. S. Bldg., Washington 25, D. C., Chief Sanitary Engineer

Harvey F. Ludwig, M.S.C.E., 6529 Harwood Ave., Oakland 18, Calif., Assoc. Professor of Sanitary Engineering, Univ. of California

Roy McGee, Route 3, Murphysboro, Ill., Sanitarian, Jackson County Health Dept.

G. Nicholas Parlette, 576 Callan Ave., San Leandro, Calif., Sanitarian, Alameda County Health Dept.

Elmer D. Parsons, 2324 Pacific Ave., Tacoma, Wash., Supervisor of Sanitation, County Div. of Sanitation, Tacoma-Pierce County Health Dept.

James R. Proaps, Loudon County Health Dept., Loudon, Tenn., Senior Sanitarian

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Joseph L. Siragusa, M.S.P.H., 1911 W. 20th St., Long Beach, Calif., Asst. General Housing Manager, Public Housing Admin.

Thomas P. Smith, Box 166, Tallahassee, Fla., Sanitary Engineer, Leon County Health Unit

Walter C. Stallings, P. O. Box 138, Shelby, N. C., Senior Sanitarian, Cleveland County Health Dept.

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Arthur F. Witesman, EUCOM Exchange System, APO 696-A, PM, New York, N. Y., Sanitation Consultant, Services Division

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Industrial Hygiene Section

Frederick A. Evis, M.D., 14 Douglas Crescent, Toronto, Ont., Canada, Student, Univ. of Toronto, School of Hygiene

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Food and Nutrition Section

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Maternal and Child Health Section

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Public Health Education Section

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Public Health Nursing Section

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Epidemiology Section

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John Mason, D.V.M., Comision Mexico-Americana, P.E.F.A., Cordoba Vera Cruz, Mexico, Veterinarian, Para la Erradicacion de La Fiebre Aftosa, U.S.D.A.

School Health Section

Herbert C. Mann, M.D., 58 S. Buffalo St., Orchard Park, N. Y., General Practice

Verre Simpson, M.D., Box 1097, 945 Milam, Shreveport, La., Director of School Health, Caddo-Shreveport Health Unit

Dental Health Section

Gene J. Franchi, D.D.S., 806 19th St., Lawrenceville, Ill., Public Health Dentist, Lawrence-Wabash County Health Dept.

Abraham Gudwin, D.D.S., M.P.H., City Hall, Health Dept., Kalamazoo, Mich., Dental Director, Kalamazoo City-County Health Dept.

Medical Care Section

LeRoy E. Bates, M.D., 1246 Hearst Ave., No. 9, Berkeley 2, Calif., Student, Univ. of California School of Public Health

Duncan W. Clark, M.D., 44 Prospect Park West, Brooklyn, N. Y., Exec. Officer, Dept. of Environmental Medicine and Community Health, State Univ. College of Medicine

Colonel Charles E. Cocks, Jr., M.C., 249 16th Ave., San Francisco, Calif., Professor of Medical Military Science and Tactics, Univ. of California Medical School

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Arthur H. Harlow, Jr., 120 Wall St., New York 5, N. Y., President, Group Health Insurance Inc.

Carl T. Heinze, 1330 W. Michigan, Indianapolis, Ind., Hospital Administrative Consultant, State Board of Health

David H. Hitt, M.S., 2220 Elliott Ave., Minneapolis 4, Minn., Student, Univ. of Minnesota

J. Henry Horowicz, LL.D., Jackson Bldg., Room 630, Ottawa, Ont., Canada, Exec. Officer, Health Insurance Studies, Dept. of National Health and Welfare

Virginia Insley, 1005 West Ave., Richmond, Va., Chief, Social Service, Richmond City Health Dept.

H. J. Leuchter, M.D., 509 N. Washington St., Baltimore 5, Md., Student, Johns Hopkins Univ.

Don A. Northrop, Rt. 1, Box 356, Mercer Island, Wash., Managing Director, Group Health Cooperative of Puget Sound

Pauline Ryman, M.S.S., 260 Crittenden Blvd., Rochester, N. Y., Director of Social Service, Strong Memorial Hospital

Leandro Santos, M.D., Box 1068, Ponce, Puerto Rico, Medical Director, Tuberculosis Hospital of Ponce

Unaffiliated

Helen C. Baird, 80 LeMoyne Ave., Washington, Pa., Practical Nurse

Lou Berra, 1127 Pine St., St. Louis, Mo., Business Manager, Labor Health Institute

Christopher M. Elmore, Jr., 4100 Peachtree Rd., Apt. 7-C, Brookhaven, Ga., Entomologist, Public Health Service, Communicable Disease Center

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Colonel Joseph H. McNinch, M.C., 1020 19th St., N.W., Washington 6, D. C., Medical Officer, United States Army

E. Powers Mincher, LL.B., 417 Sanhican Drive, Trenton, N. J., Chief, Bureau of Personnel and Accounts, Dept. of Health

Edward E. Minty, 1238 S. Taylor, Arlington, Va., Public Health Advisor, Div. of State Grants, Public Health Service

Waldo J. Rodriguez, M.D., Negociado Medico Social, Dept. de Salud, Santurce, Puerto Rico, Consultant in Psychiatry

Carroll N. Smith, Ph.D., P. O. Box 3391, Orlando, Fla., Entomologist, U. S. Dept. of Agric.

EMPLOYMENT SERVICE

The following pages present information for those seeking qualified public health personnel and for those seeking positions in public health.

This is a service of the Association conducted without expense to the employer or employee.

POSITIONS AVAILABLE

Maternal and Child Health Director—to head Bureau of Maternal and Child Health in a Health Department of an eastern state. Medical degree with specialty in pediatrics required. Public health experience or an M.P.H. desirable. Beginning salary $7,500 a year. Give qualifications and when available. Write: **Box A-96,** Employment Service, A.P.H.A.

Director of Health—must be a graduate of an accredited medical school, and have training and experience in public health administration; preferably a M.P.H. degree. Salary open. Two weeks vacation with pay, retirement, cumulative sick leave. Apply: Personnel Department, City of Jackson, Mich.

Public Health Physician for Regional Office, State Health Department; salary up to $8,712; excellent Civil Service and retirement system.

Public Health Physician for Assistant Chief, Division of Local Health Services, State Department of Public Health. Salary range, $6,900–$8,712; may start above minimum.

Competitive Examination for Health Officer to be held in Chicago on May 25 for place on eligible list for local public health districts in Illinois. Open to qualified public health physicians. Position open in the Champaign-Urbana Public Health District at $7,500–$9,000.

For information on above positions, write Roland R. Cross, M.D., Director, State Department of Public Health, Springfield, Ill.

Public Health Physician as Medical Director of Bi-County Health Department in southwestern Illinois. Important public health job to be done. Salary $7,000. Apply: Dr. Emmett J. Gillespie, Secretary, Alexander-Pulaski Bi-County Board of Health, Cairo, Ill.

Health Officer—Establishment—new department; must have State of Connecticut Public Health Certificate. Starting salary $7,500, yearly increments. Apply to Town Manager, Stratford, Conn.

Medical Director for well established City-County Health Department; beginning salary $9,000. For further information, contact: Eau Claire City-County Health Department, Eau Claire, Wis.

Milk Sanitarian to direct an industry-sponsored state-wide program for the production and processing of quality milk. Applicant should have majored in dairy science with preferably a Ph.D. in bacteriology or a degree in veterinary medicine. Practical training in quality milk production and processing is essential.

Address applications with transcripts of college records and recommendations to: P. O. Box 830, Providence, R. I.

Director for Bureau of Industrial Hygiene. Must have good experience; preference given to applicants with Master's Degree. Salary starts at $6,780; liberal vacation, sick leave, and retirement. For details, write: Dr. L. J. Roper, State Health Commissioner, Richmond, Va.

Industrial Hygiene Engineer for midwest chemical firm doing atomic energy work. Two or three years' experience and/or special training desired. Work is primarily of an engineering and administrative nature. Salary depends upon qualifications and experience. Write: **Box A-94,** Employment Service, A.P.H.A.

Bacteriologist with commercial experience in manufacture of bacterial vaccines; probable location New York City metropolitan area. Write: **Box A-95,** Employment Service, A.P.H.A.

Public Health Physician as Health Officer of a newly established county health department. Salary range $7,200–$9,000. Qualified health officer may start above minimum. Write: G. Alzeno, D.D.S., president, JoDaviess County Board of Health, Stockton, Ill.

Public Health Administrator in Bureau of Maternal and Child Health and Crippled Children. Four years progressive administrative experience required of which two years shall have been in health, medical, or social welfare administration and one of the latter two years shall have been in a governmental agency; graduation from a college or university of recognized standing with specialization in the social sciences supplemented by one year of successful graduate study in public health administration or public administration. Salary range $373.75–$443.75 per month plus $25 monthly bonus. Air mail qualifications and earliest availability date to Civil Service Commission and Person-

nel Classification Board, Territory of Hawaii, Honolulu, T. H.

Assistant Director, Department of Public Health and Welfare. Directly responsible for medical services division including venereal disease clinic. Candidates should be licensed to practise medicine in Texas or be eligible for licensure. Salary $7,560 plus car allowance. Write: Director of Health, Fort Worth, Tex.

Bacteriologist III—to plan and supervise the laboratory work of the Kalamazoo City-County Health Department; perform bacteriological, serological, and to a lesser degree hematological and chemical work for diagnostic purposes; train laboratory personnel and do related work. Starting salary $4,500 to $5,500 depending upon qualifications. Write: Director, Health Department, Kalamazoo, Mich.

Deputy Health Commissioner with training or experience in public health. Initial salary up to $8,500 per year plus travel. Write: Saginaw County Department of Health, Saginaw, Mich.

Public Health Physician as Health Officer of a City-County Health Department. Salary range $8,000–$10,000. Write: D. L. Warner, D.D.S., president, Defiance County Board of Health, Defiance, Ohio.

Public Health Nurses for generalized program in suburban area; staff education and students; five day week; vacation, sickness, and retirement benefits. Write: John Davenport, Personnel Director, Court House, Arlington County, Va.

Public Health Nurses—large health department, generalized program including schools. Starting salary $280; car furnished or 7¢ per mile; 5 day week; merit system; retirement plan; liberal holiday, vacation, sick leave. Public health nursing course required. Write: Personnel Department, Room 119, Kern County Court House, Bakersfield, Calif.

Public Health Nurse. Salary range $250–$290 per month according to educational qualifications and years experience; 39 hour week; generalized program; opportunity for advancement. Write: Spokane Visiting Nurse Association, Room 605, City Hall, Spokane, Wash.

Public Health Nurse for generalized program in county of 35,000. Salary $235 per month with $65 per month travel allowance; 2 weeks sick leave and 3 weeks vacation with pay. Good retirement system. Write: President, Lee County Board of Health, 123 E. First Street, Dixon, Ill.

Director of Public Health Nurses for generalized nursing program in an official agency (population 78,000, staff of 13 nurses and 1 supervisor). Bachelor's Degree, 5 years of public health nursing experience at least 2 of which must have been under adequate supervision and 2 of which involved supervision of public health nurses. New York State retirement plan; 2 days per month vacation; 1 day per month sick leave; car furnished for professional use. Apply: Dr. H. C. Miles, Cattaraugus County Health Department, Olean, N. Y.

Public Health Nurses for generalized county nursing services. Salary $220 per month plus travel allowance. Registration in Ohio or eligibility to secure registration required; sick leave; 5½ day week. Write: Health Commissioner, District Health Department, Wooster, Ohio.

Public Health Nurse for generalized county program. Salary $235 per month with $65 monthly travel allowance, 2 weeks sick leave and 3 weeks vacation with pay. Good retirement system. Write: President, Lee County Board of Health, Dixon, Ill.

POSITIONS WANTED

Sanitary Engineer with 18 years municipal engineering experience, 2 years county experience, 3 years Sanitary Corps, U. S. Army; experienced in mosquito control; desires responsible position in sanitary or public health engineering, preferably in the East with industry or health department. Write: **Box E-13,** Employment Service, A.P.H.A.

Woman Physician, M.P.H., long experience in school health work desires position in school system of a small city either coast. Available September. Write: **Box Ph-25,** Employment Service, A.P.H.A.

Health Education Consultant, M.P.H. degree. Undergraduate degree in public health nursing and education; wide experience in both nursing and health education. Female, age 39. Interested in university teaching; coördinator in health education, program planning and promo-

tion, etc. Free to travel. Write **Box H.E.-33,** Employment Service, A.P.H.A.

Public Relations, male 32, experienced as public relations director of national welfare agency, now on state staff of voluntary health organization, qualified for both administration and technical development of community relations, publicity media, fund raising, prepared for executive responsibility in health or welfare service. Write: **Box Mi-3,** Employment Service, A.P.H.A.

Announcements

Opportunities in Alaska

Chief, Section of Local Health Administration for Alaska Department of Health in Juneau. Minimum qualifications: M.D., 1 year's internship, graduate study in public health, 5 years of experience in the practice of medicine, 3 of which must have been in the field of public health. Starting salary $10,440.

Director, Division of Maternal and Child Health and Crippled Children's Services for Alaska Department of Health in Juneau. Minimum qualifications: M.D., 1 year's internship, graduate study in public health and pediatrics and/or obstetrics, 1 year experience in public health. Experience may be substituted for required graduate study. Salary open.

Pediatric Consultant for Alaska Department of Health in Juneau. Minimum qualifications: M.D., 1 year internship, 2 years graduate study, and 2 years experience equivalent to American Board requirement. Starting salary $9,300.

For complete information on above positions, write: Alaska Department of Health, Box 1931, Juneau, Alaska.

Opportunities in Detroit

The Detroit Civil Service Commission announces opportunities in the following classifications:

Public Health Nurses (Must have completed course in public health nursing)	$3,378 to $3,738 per year
Junior Public Health Nurses (Must be eligible to matriculate in university and take courses in public health nursing)	$3,032 to $3,296 " "
Medical Technologists	$3,106 to $4,123 " "
Nutritionists	$3,456 to $3,774 " "
Physical Therapists	$3,355 to $3,698 " "
Industrial Hygienists	$3,454 to $4,641 " "
Dental Hygienists	$3,287 " "
Senior Dentists	$5,176 to $5,572 " "
Veterinarians	$3,190 to $4,383 " "

All rates listed above are for a 40 hour week, with liberal vacation and sick leave provisions, pensions, death and sickness benefits, and duty disability provisions. Apply: Detroit Civil Service Commission, 15th Floor Water Board Building, 735 Randolph Street, Detroit 26, Mich.

Opportunities in Latin America

The Institute of Inter-American Affairs is actively engaged in recruiting the following personnel:

Public Health Physicians (Grades GS 10–14) for Bolivia, Brazil, Chile, Ecuador, Haiti, Honduras, Nicaragua, and Paraguay.
Sanitary Engineers (Grades 11–13) for Bolivia, Chile, Brazil, Colombia, El Salvador, Mexico, Panama, and Paraguay.
Nurses (Grades 7–11) for Bolivia, Brazil, Chile, Colombia, Costa Rica, Honduras, Mexico, Panama, and Paraguay.

Those interested should write to the Director, Health and Sanitation Division, IIAA, 499 Pennsylvania Avenue, Washington 25, D. C., if possible with a filled out Civil Service Form 67 for which blanks may be secured from some post offices, the nearest Civil Service Commission office, or from the Institute.

New York State Department of Civil Service

The New York State Department of Civil Service expects to announce in the near future a nation-wide examination for Principal Milk Sanitarian, salary $7,352 to $8,908 in 5 annual salary increases. These salaries include the present cost-of-living adjustment. This position will head the Milk and Restaurant Sanitation Section of the New York State Department of Health. Duties will include administration of a state-wide sanitation program.

For application blanks and for other details on requirements and date of examination, write Examinations Division, 39 Columbia Street, Albany 7, N. Y.

U. S. Public Health Service Regular Corps Examination for Sanitary Engineers

Competitive examinations for the appointment of officers as Sanitary Engineers in the Regular Commissioned Corps of the U. S. Public Health Service will be held in various cities throughout the country on August 6, 7, and 8, 1951. The examination will include professional written tests, an oral interview, and a physical examination. Completed applications must be in the Washington office by July 9, 1951.

Appointments are permanent and provide opportunities for career service in research and public health

activities. Appointments will be made in the grades of Assistant and Senior Assistant, equivalent to Navy ranks of Lieutenant (j.g.) and Lieutenant, respectively. Entrance pay for an officer with dependents is $4,486 in the Assistant grade and $5,346 in the Senior Assistant grade, including rental and subsistence allowance. Applicants must have a Bachelor's Degree in engineering, preferably in civil, sanitary, or chemical engineering, and must complete by May, 1952, a total of at least three additional years of professional training and experience. At least two years of the required experience must have been in public health or an acceptable related field.

For application forms and additional information write to: Surgeon General, U. S. Public Health Service, F.S.A., Washington 25, D. C., Attention: Division of Commissioned Officers, Desk A.

Advertisement

Please direct all inquiries to Burneice Larson, Director, The Medical Bureau, Palmolive Building, Chicago, Ill.

Opportunities Available

WANTED—(a) Chairman, department of preventive medicine and public health, university medical school. (b) Medical directors; metropolitan, county and city-county health departments; state-wide program. (c) Assistant director of health; university city of 200,000; Southwest. (d) Director, public health; town, 45,000, South. **PH5-1**

WANTED—(a) Health educator; university city, 125,000, Midwest. (b) Bacteriologist to direct laboratories, city-county health laboratories; college town, Midwest. (c) Industrial hygienist; leading industrial company; South. (d) Associate professor in health education; doctor's degree in health education, teaching experience required; state university. **PH5-2**

WANTED—PUBLIC HEALTH NURSES FOR FOLLOWING—(a) To serve as consultant; state department; West. (b) To supervise generalized program; college town, 35,000, East. (c) To direct school health program; staff of 8 field nurses; town, 80,000, Midwest. (d) Director, visiting nurse association; staff of 10; college town, Midwest. (e) To supervise, newly created city health department; Southwest. **PH5-3**

Wanted—Situations for the Following Candidates

(a) PUBLIC HEALTH NURSE ADMINISTRATOR; B.S. (Public Health Nursing), M.A. (Health Education); 6 years, state health department; 3 years, teaching experience; 3 years, supervisor, metropolitan county health department. (b) HEALTH EDUCATOR: M.A. Educational Psychology, Columbia; M.P.H. Education, Harvard; 6 years, supervisor health education, county health department; 4 years, director, health education, state tuberculosis association. (c) PUBLIC HEALTH PHYSICIAN; Master's in Public Health, Johns Hopkins; 5 years, county health officer; 6 years, director, metropolitan department of health; certified by American Board of Preventive Medicine and Public Health. (d) PUBLIC HEALTH DENTIST; Ph.D. (Public Health and Social Welfare); 8 years' successful private practice; 2 years' public health experience. (Please direct all inquiries to Burneice Larson, Director, The Medical Bureau, Palmolive Building, Chicago, Ill.)

NEWS FROM THE FIELD

NATIONAL CONFERENCE ON CHRONIC DISEASE: PREVENTIVE ASPECTS

Methods of preventing chronic disease were explored at a three day Conference on Chronic Disease: Preventive Aspects, held in Chicago on March 12–14, 1951. The conference was sponsored by the National Commission on Chronic Illness in coöperation with the U. S. Public Health Service and the National Health Council. The Commission, an independent agency, was founded jointly by the American Hospital Association, the American Medical Association, the American Public Health Association, and the American Public Welfare Association. The chairman of the Commission is Leonard W. Mayo and its director is Morton L. Levin, M.D.

The conference brought together representatives of voluntary and official agencies, professional organizations, and individuals in the fields of medicine, hospitals, public health, welfare, dentistry, nursing and related fields.

Prior to the conference, more than twenty national health organizations participated in the preparation of authoritative summaries of what is known about prevention and early detection of arthritis and rheumatism, heart disease, cancer, poliomyelitis, multiple sclerosis, cerebral palsy, epilepsy, diabetes, blindness, deafness, tuberculosis, and syphilis. Statements were also prepared on emotional disorders, heredity, occupation, and malnutrition as they may be related to chronic disease.

Working sections were set up to evaluate these statements, to consider the development of preventive programs in the practice of medicine, and in the education of physicians, dentists, nurses, social workers, and health educators. Other groups discussed methods for organizing the community to expand preventive programs, and for providing information to the public about the importance of early case finding and treatment of chronic disease.

Leonard A. Scheele, M.D., Surgeon General of the U. S. Public Health Service, discussed Concepts of Primary Prevention and Screening at the opening general session of the conference. David Seegal, M.D., professor of medicine, Columbia University, spoke on Prospects for the Prevention of Chronic Diseases.

Chairmen of the working committees included T. Duckett Jones, M.D., David D. Rutstein, M.D., David Seegal, M.D., Martin Cherkasky, M.D., Edward J. Stieglitz, M.D., Ward Darley, M.D., Irene L. Beland, R.N., Dora Goldstine, Frank S. Stafford, John W. Ferree, M.D., Lester Breslow, M.D., Beryl Roberts, and Granville W. Larimore, M.D.

Recommendations of the working committees were summarized at the closing general session on March 14, presided over by Mrs. Oswald B. Lord, president-elect of the National Health Council. Herman E. Hilleboe, M.D., Commissioner, New York State Department of Health, presented the conference summary.

DR. PARRY MAKES RETURN VISIT

Robert Hughes Parry, M.D., Medical Officer of Health of Bristol, Eugland, who was a member of the team of speakers which attended a series of public health meetings in 1943, principally in western states, under the auspices of the A.P.H.A., returned for a second visit late in February, 1951, under the aus-

pices of the British Information Service. Dr. Parry visited New York, Washington, the Tennessee Valley Authority, Cincinnati, Des Moines, Chicago, Milwaukee, Minneapolis, Boston, and Detroit, among other cities.

While in New York City Dr. Parry, on behalf of the Council of the Society of Medical Officers of Health of Great Britain, presented a certificate of honorary Fellowship in the Society to Reginald M. Atwater, M.D., Executive Secretary of the American Public Health Association.

LOS ANGELES SUPPORTS MEDICAL RESEARCH

In November, 1950, Los Angeles, Calif., adopted an ordinance which made available from the City Pound unclaimed animals to qualified medical research laboratories. This proposal received a total of more than 619,000 votes, of which 357,393 were in the affirmative. The great interest in the proposition is indicated by the fact that this was a vote greater than that cast for the Governorship of California in Los Angeles.

Following the outcome, a taxpayer's suit was filed against the city to set aside the ordinance, but it has been overruled, according to Charles M. Carpenter, M.D., president of the Medical Research Association of California.

NEW AWARD TO HENCH AND KENDALL

The Masonic Foundation for Medical Research and Human Welfare, New York, recently presented an Award of Merit to Philip S. Hench, M.D., and Edward C. Kendall, Ph.D., of the Mayo Clinic, Rochester, Minn., for their contributions to the study of rheumatic fever. The ceremony was part of a 2 day conference on progress made in studies for the past 3 years by 6 medical research units working on rheumatoid diseases under grants from the Grand Lodge, Free and Accepted Masons of New York State. The Foundation established the program of rheumatic fever research in 1948 and has contributed over $600,000 to its support. Currently a million dollar campaign is being carried on by members of the fraternity for the continued support of this program and other charities. Drs. Hench and Kendall in 1949 received a Lasker Award of the American Public Health Association for their development of Cortisone in the therapy of rheumatoid arthritis. In 1950, they received jointly the Passano Foundation Award for the same work and the Nobel Prize.

MEDICAL-PERSONAL RELATIONS

A series of panels on Medical-Personal Relations in Industry will be held at the School of Public Health, University of Michigan, Ann Arbor, May 17–19. Under the general chairmanship of C. D. Selby, M.D., resident lecturer in industrial health at the School of Public Health, the faculties of 8 different schools and departments of the university will make up the panels of the 3 day seminar. Physicians in charge of industrial medical departments and medical assistants, psychiatrists, psychologists, and other staff members, when designated by the physician in charge, are eligible for attendance. The enrollment fee is $10. Further information from Harry E. Miller at the School of Public Health.

LASKER FOUNDATION FACT SHEET

Carrying out a policy of some years duration, the Albert and Mary Lasker Foundation, Chrysler Building, New York 17, has recently made available several new editions of the Fact Sheet on the following topics: 1. What are we doing about cancer? 2. Why research and training funds should be increased for the National Cancer Institute as a part of our national defense effort. 3. Cancer Fact Sheet, New York State. 4. What are we doing about diseases of the heart and the cardiovascular-renal

system? 5. Why research and training funds should be increased for the National Heart Institute. 6. Heart Disease Fact Sheet, New York State. 7. What is the mental health situation in the United States today and how does it relate to our national defense? 8. Why research and training funds should be increased for mental health as a part of our national defense program. 9. What help are we giving to arthritis and rheumatism sufferers in this country?

In each case very provocative questions and answers analyze the statistical background and pose action measures. Those interested in receiving copies should apply to the Foundation.

PHILADELPHIA PUBLIC HEALTH SOCIETY AFFILIATE OF STATE ASSOCIATION

At a recent meeting of the Philadelphia Public Health Society, it was unanimously agreed to accept the invitation of the Pennsylvania Public Health Association to become affiliated with the state organization and hereafter to be known as the Pennsylvania Public Health Association, Region No. 1. The Pennsylvania Public Health Association is affiliated with the A.P.H.A. In this way a link is provided between the local, state, and national groups. Membership in the local group is open to all persons professionally engaged or interested in public health work.

The former officers of the Philadelphia Public Health Society are continuing temporarily as officers of the new affiliate. They include Mildred C. J. Pfeiffer, M.D., president, and Rose M. Cullen, M.S.P.H., secretary.

NATIONAL INTERSTATE MILK CONFERENCE

The second annual meeting of the National Conference of Interstate Milk Shipments will be held in the Statler Hotel, St. Louis, Mo., June 4–6, 1951. Information concerning the conference may be secured from its chairman, J. L. Rowland, Bureau of Food and Drugs, Missouri Department of Health, Jefferson City. Hotel reservations should be made directly with the Statler. (See *A.J.P.H.*, Oct., 1950, p. 1357, for news of the first conference.)

A.W.W.A. ELECTS

The American Water Works Association has elected the following officers for the year 1951–1952:

President—A. E. Berry, Ph.D., director of sanitary engineering, Ontario Department of Health

Vice-President—Charles H. Capen, chief engineer, North Jersey Water Supply Commission

Treasurer—William W. Brush, editor, *Water Works Engineering*

Earlier this year, the Board of Directors elected three members to Honorary Membership in recognition of their important contributions to water technology and water works organization. Those honored are Charles R. Cox, Sheppard T. Powell, and Samuel B. Morris. The president and the first two honorary members are Fellows, the treasurer and the third honorary member are members of the American Public Health Association.

NEBRASKA PUBLIC HEALTH ASSOCIATION

The Nebraska Public Health Association was organized in November, 1950, at the Nebraska Public Health Conference. It has 160 members, and 7 sections have applied for membership. Officers are:

President: Roland H. Loder, M.D.
President-elect: R. M. Babcock
Vice-president: Leeta Holdrege
Secretary: Mrs. O. L. Webb
Treasurer: R. B. Willard

INTERNATIONAL GERONTOLOGY CONGRESS

Dr. E. V. Cowdry, St. Louis, Mo., president of the Second International Gerontological Congress, has announced that the Congress will assemble in St. Louis, September 9–14, 1951, under the

sponsorship of a number of specialized groups, including the American Public Health Association.

The program will include sections on biology and medicine, on sociology, psychology, education and religion, on economics and welfare, and on medical services, hygiene and housing. Dr. Joseph W. Mountin of the U. S. Public Health Service, Washington, D. C., is chairman of the last named section.

Persons interested in participating in the program should communicate with Dr. Mountin or Dr. Cowdry. The Committee on Exhibits is under the chairmanship of Dr. Albert I. Lansing, 660 South Kingshighway, St. Louis 10, Mo.

WHO NEWS

El Salvador's Pilot Project

El Salvador will have the first demonstration area in the Americas under the United Nations Point Four program. The Salvador Government has signed an agreement that includes WHO, FAO, UNESCO, the International Labor and the International Civil Aviation Organizations, as well as the Technical Assistance Administration.

The agreement on health provides for a demonstration area in the central part of the country. It has a population of about 100,000 and was chosen because it is a rural area typical of many regions in Latin America.

The headquarters town of Quezaltepeque with a population of 16,000 has contributed land for the buildings, 11 other towns are contributing facilities for clinics. A number of towns are contributing funds for water and sewerage systems. In the initial year, the El Salvador Ministry of Public Health and Assistance is contributing about $200,000 in personnel, buildings, and supplies and has already trained 25 new public health specialists. WHO is contributing about $150,000.

Dr. Juan Allwood Paredes is the director general of health of El Salvador.

Post-War Decline in Tuberculosis

WHO has published a report indicating a general decrease in tuberculosis deaths since 1945, in some places "verging on the dramatic." The report suggests that if the present rate of decrease in mortality continues, "the end of the present century might well find this disease as rare as leprosy is at the present time."

Of the 30 countries covered by the report, Denmark had achieved the lowest mortality rate, 19 per 100,000 in 1949. It was practically alone among the warring countries in World War II in which there was no increase in rates during the war years. In France rates have fallen from 134 per 100,000 in 1941 to 68 in 1949; in Italy from 100 in 1943 to 49 in 1949.

In presenting the report, the fact that it covers only 30 countries is used to illustrate the poverty of knowledge with regard to the epidemiology of world tuberculosis. A further caution refers to the limited value of death rates alone. Further, overall rates for a country give little information on nests of infection that need special attack.

The report, entitled "Tuberculosis Mortality: 1937–1949," was prepared by the chief of WHO's Tuberculosis Section, Dr. John B. McDougall. It is published in the *WHO Epidemiological and Vital Statistics Report*, 3:10, October, 1950, in both French and English.

Pakistan's Malaria Control Program

In January, 1951, WHO's malaria control team in East Bengal, Pakistan, completed its operations by turning over its activities to specially trained Pakistan health personnel. In two years it succeeded in bringing about a drastic reduction in the 194 square mile area which the team covered—a total reduction of 87 per cent in the spleen rate (a standard test for malaria). The operations also had an immediate effect on the productivity of farm labor and food

production. The rice crop yield increased by 19 per cent in sprayed areas.

Dr. G. Gramiccia, a WHO malariologist, who was in charge of the Pakistan campaign, has now gone to Lebanon as leader of a WHO anti-malaria campaign provided for under the technical assistance program of the United Nations.

WHO-UNICEF teams have also been carrying on anti-malaria programs in India, Thailand, and Afghanistan. In sprayed areas totaling 4,000 square miles, mosquitoes have disappeared and in many areas infants are free of infection.

A control program has been undertaken in Saudi Arabia where the Gambia mosquitoes are reported present. Dr. M. A. Farid of WHO is surveying the incidence and spread of the diseases preparatory to a control project for which technical assistance funds will become available in 1952.

SUMMER INSTITUTES HERE AND THERE

(Announcements as received up to March 31)

National Training Laboratory in Group Development, Fifth Summer Session, Gould Academy, Bethel, Me., June 17–July 6 and July 15–August 3. A research and training laboratory for "those who are interested in human relations problems and who have the opportunity to do something about them" in many fields—public health, community organization, family life, government, among others. Sponsored jointly by the National Education Association and the Research Center for Group Dynamics of the University of Michigan. Conference fee $150, board and room, average $40 a week. Apply National Training Laboratory in Group Development, 1201 16th St., N.W., Washington 6, D. C.

Interpersonal Relationships in Nursing, University of California, Los Angeles, July 9–August 10. Open to student advisers in public health agencies, teachers in schools of nursing, hospital head nurses and supervisors. No information as to cost. Further information from University of California School of Nursing, 405 Hilgard Ave., Los Angeles 24.

Community Nutrition Institute, Syracuse University, Syracuse, New York, June 18–30. An inservice program in coöperation with New York State Department of Health in public health nutrition for physicians, community nutritionists, clinical dietitians, public health nurses, health educators, and other interested personnel. Three hours credit toward an advanced degree. Cost about $120. Apply Dr. Anne Bourquin, College of Home Economics, Syracuse University, Syracuse 10, N. Y.

Special Program in Food Technology, Massachusetts Institute of Technology, June 25–July 13. For those "having some knowledge of the basic sciences pertinent to food technology," the course will give particular emphasis to recent developments in food manufacture. Academic credit requires a final examination. Tuition $100. Enrollment limited. Apply Professor Walter H. Gale, Room 3–107, M.I.T., Cambridge 39, Mass.

Graduate Seminar in School Health Education, Department of Education, with the coöperation of the Department of Public Health, Yale Graduate School, June 25–August 3, plus an additional 2 weeks for preparation of term papers and reports on projects. Using workshop techniques, the seminar is designed for elementary and secondary school teachers with special consideration to the particular problem of each student's school. The State Department of Health and 13 other state official and voluntary health agencies are coöperating in the Seminar. Charles C. Wilson, M.D., professor of public health and education and

Joseph K. Hill, Ph.D., instructor in public health are in charge of the program. Eight points credit. Tuition $120. For Connecticut school personnel some scholarships are available. For this an application should be made to Scholarship Committee, Connecticut Tuberculosis Association, 43 Farmington Ave., Hartford, after acceptance by the university. Application, including a one page statement of the particular health education problems in which the student is interested and a letter of recommendation from his principal or superintendent which outlines the student's responsibilities in health education in the school, should be sent to Clyde M. Hill, chairman, Department of Education, Yale University, New Haven, Conn.

Sex Guidance in Family Life Education Workshop, Boston University, July 9–27. In coöperation with Massachusetts Society for Social Hygiene. Designed for parents, social workers, guidance counselors, and others who wish orientation in this field. Graduate or undergraduate credit depending upon work done. Apply Director of Summer Session, Boston University, 725 Commonwealth Ave., Boston.

Education for Marriage and Family Life, Work Conference, Teachers College, Columbia University, July 2–July 20. Designed for workers concerned with family life education. Limited registration. Further information from Professor Helen Judy Bond, Teachers College, New York 27.

Yale Summer School of Alcohol Studies, Ninth Annual Session, Yale University, July 7–August 3. Designed to make the most recent of scientific research available for application to the problems of alcohol in the community, particularly in relation to current problems of defense and industrial manpower. Director, Selden D. Bacon, associate professor of sociology and director of Yale's School of Alcohol Studies. Fees, $250 including room and board for ministers, social workers, probation officers, teachers, nurses, and various other categories; $425 for others. Summer School of Alcohol Studies, 52 Hillhouse Avenue, New Haven, Conn.

Living in the Later Years, Adult Education Workshop on Gerontology, New York University Summer School, Chautauqua, July 16–27. "For educators and others who are responsible for seeing to it that the later years of life are happy years." Three points of graduate credit. Further information from Professor John Carr Duff, Department of Health Education, New York University, New York 3.

Graduate Camp Summer Session, New York University School of Education, July 3–August 11. Twenty-fifth year of the Camp at Lake Sebago, New York—"a living laboratory of democracy." There are numerous courses in health, safety, and physical education and research courses in this field. Director, Professor Jay B. Nash. Living expenses $125, tuition $15.50 per point. Further information and application blanks from New York University School of Education, Washington Square, New York.

Fourth Annual Institute on the United Nations, Mount Holyoke College, June 24–July 21. Sponsored by the Carnegie Endowment for International Peace, Foreign Policy Association, Woodrow Wilson Foundation, World Peace Foundation and 14 New England Colleges. Study and discussion with specialists in international affairs, particularly United Nations officials. Possibilities of activities at the local community level is among the special weekly emphases. Costs approximately $60 weekly, $230 for the entire session. Executive Secre-

tary, Mount Holyoke Institute on the United Nations, South Hadley, Mass.

PERSONALS

AARON AMRAMY, chief sanitary engineer, Ministry of Health, Jerusalem, Israel, was a recent visitor in this country while on a WHO traveling fellowship to Venezuela and Brazil.

JUSTIN M. ANDREWS, Sc.D.,* deputy officer in charge of the Communicable Disease Center, Public Health Service, on February 22 was awarded the honorary degree of Doctor of Laws by the Johns Hopkins University.

REGINALD M. ATWATER, M.D.,* was recently elected an Honorary Fellow of the Society of Medical Officers of Health of Great Britain.

WILL H. AUFRANC, M.D.,* on loan from the U. S. Public Health Service where he was assistant chief of the Division of Venereal Disease, Bureau of State Services, has been appointed acting director, Health Resources Office, National Security Resources Board, succeeding NORVIN C. KIEFER, M.D.†

CONSTANCE AUSTIN † has joined the staff of the Cambridge (Massachusetts) Tuberculosis and Health Association as health educator.

POUL BONNEVIE, M.D., professor of the Hygiene Institute, Copenhagen, Denmark, who is visiting public health institutions in the United States under a grant from the Rockefeller Foundation, was a recent visitor in the office of the American Public Health Association in New York.

ROBERT BOYLE, a former sanitarian with the Lima Department of Health, is now sanitarian for the Allen County Health Department, Ohio.

LEO E. BROWN,† who joined the American Medical Association staff early in 1951 as executive secretary of the new Student American Medical Association, has also been appointed assistant to the secretary and general manager in charge of the Department of Public Relations.

FRANCISCO A. CARDOSO, M.D.,† professor of food hygiene, School of Hygiene, University of São Paulo, Brazil, has been appointed Secretary of State for Public Health and Social Assistance, State of São Paulo.

ANTON J. CARLSON, M.D.,† professor emeritus of physiology, University of Chicago, was reëlected president of the National Society for Medical Research at its recent annual meeting on February 11. ANDREW C. IVY, M.D., vice-president and head of the Chicago Professional Colleges of the University was reëlected secretary-treasurer.

H. B. CONRAD, formerly assistant to the manager of The Diversey Corporation's Southwestern Division in Kansas City, has been promoted to manager.

RONALD R. CROSS, M.D.,† director, Illinois Department of Public Health, has been unanimously elected to honorary membership in the Illinois State Veterinary Medical Association.

HELEN A. DAVIS has been named executive secretary of the Union County (Ind.) Tuberculosis Association, succeeding NELLIE F. ROSS.

RUSSELL J. N. DEAN,† formerly executive officer of the Physical Medicine Rehabilitation Service in the Veterans Administration's Department of Medicine and Surgery, has been made special assistant for defense planning, Office of Vocational Rehabilitation, Federal Security Agency, Washington, D. C.

SYBEL DEGNAN, R.N., has been appointed supervisor of nurses in the Columbiana County (Ohio) Health Department, succeeding HELEN DONOVAN, R.N., who is now with the Veterans Administration in Erie, Pa.

R. M. DOBBINS, sanitarian, Greenbrier, Monroe, and Pocahontas Counties Health Department (W. Va.), has resigned to take a position with Broughton's Dairy, Marietta, Ohio.

JUDITH EDES, a National Tuberculosis Association trainee, has been appointed an area field representative for the Iowa Tuberculosis Association.

CORTEZ F. ENLOE, M.D., Jr., has been made special consultant to the New York State Department of Health for medical supplies in the civil defense program. He is also a consultant to the Council on National Emergency Medical Service of the American Medical Association, and to the Surgeon General of the United States Air Force.

ALICE B. GALLAGHER, executive secretary of the Newton (Mass.) Tuberculosis and Health Association, has resigned to become rehabilitation director of the Middlesex Health Association.

JOSE M. GONZALEZ, M.D.,† a practising specialist in children's dentistry in Santurce, has been appointed to the newly created position of consultant to the Bureau of Oral Hygiene of the Insular Health Department of Puerto Rico. A graduate of St. Louis University Dental School, Dr. Gonzalez won the "Dr. Fernando E. Rodriguez" scientific award for 1950 given by the "Colegio de Cirujanos Dentistas de Puerto Rico," for his thesis on "Modern trends in Caries Prevention."

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* Fellow.
† Member.

CROZIER S. HART, M.D., formerly in private practice, Raton, N. M., became the medical director of the Las Animas-Huerfano Counties (Colo.) Health Department recently.

MARY HAYES has been appointed director of social service at the St. Louis County Health Department, Missouri.

FRED O. HENKER, M.D., of the U. S. Public Health Service, is the new medical officer in charge of the Central Ohio Rapid Treatment Center, a state health facility supported by federal funds.

JOSEPH HIRSH, Ed.D.,* In addition to his duties as executive secretary of the Committee on Problems of Alcohol, National Research Council, and executive secretary of the Medical Advisory Board of the Hebrew University and Hadassah, has been appointed historian for Mt. Sinai Hospital, New York, in which capacity he is preparing the centennial history of that institution.

JACOB HOROWITZ, M.D., formerly assistant director of Maimonides Hospital, Brooklyn, N. Y., is now assistant director of the Bureau of Health and Hospitals in the City and County of Denver Department of Health and Charity.

GEORGE S. KLUMP, M.D.,† at the annual meeting of the Pennsylvania Public Health Association at York on October 19, 1950, was presented with the Award of Merit which is given each year by the Pennsylvania Public Health Association for outstanding services in public health.

ARTHUR KORNBERG, M.D., senior surgeon in the Division of Biochemistry, U. S. Public Health Service, Bethesda, Md., recently received the $1,000 Paul-Lewis Laboratories Award in Enzyme Chemistry which was presented at the Boston session of the American Chemical Society in recognition of his studies on the mechanism of sugar metabolism in the body.

T. R. LAUGHBAUM, M.D., has succeeded G. T. WASSON, M.D.,† who because of ill health retired as health commissioner of Crawford-Wyandot Counties, Ohio.

S. P. LEHMAN, M.D.,* formerly health officer of Vancouver-Clark County Health Department, has succeeded EMIL PALMQUIST, M.D.,* as health officer of Seattle-King County, Washington. Dr. Palmquist is now a commissioned officer in the U. S. Public Health Service, assigned to Iran.

JACK B. LENTZ, JR., a graduate of Ohio State University and the Lorain County field training course in sanitation, has been appointed sanitarian for the Preble County Health Department, Ohio.

W. F. MARTING, M.D., has succeeded J. N. ROSE, M.D., resigned, as health commissioner of the Lawrence County-Ironton Health Department, Ohio.

BETTY K. MCLAUGHLIN, formerly field consultant in public health statistics, California State Department of Public Health, is now on the staff of the San Diego City-County Health Department.

JULIA M. MILLER, R.N., is the new executive director of the National League of Nursing Education, succeeding ADELAIDE A. MAYO, R.N.

JANET MOIR, recently with the Rainbow Hospital in Cleveland, has been appointed to the Philadelphia Society for Crippled Children and Adults to develop a program of medical social work.

LOUISE MUMM, who has been director of field service for Planned Parenthood Federation of America, for the past three and a half years, is now a staff consultant with the National Social Welfare Assembly.

S. G. PATTON, M.D.,† has resigned as Mahoning County (Ohio) health commissioner.

HARRIET PEAT, formerly on the staff of the Maryland Tuberculosis Association, has joined the staff of the New York Tuberculosis and Health Association, to inaugurate medical social service in the Lower Harlem Tuberculosis Clinic of the New York City Health Department.

JOHN J. PHAIR, M.D.,* professor of preventive medicine, University of Cincinnati College of Medicine, Ohio, has received a fellowship for study travel under the auspices of the World Health Organization and will spend April, May, and June in England and France. He will attend the Royal Sanitary Institute Annual Meeting representing the A.P.H.A.

ERNEST A. PHILEN, M.P.H.,† public health engineer with the Health and Safety Division of the Tennessee Valley Authority, resigned to accept an assignment to Mexico City as sanitary engineer with the Institute of Inter-American Affairs.

LOUIS PICKLES, C.E., M.P.H.,* head of the sanitation program at the Lawrence-Wabash County Health Department in Illinois, recently became director of the Division of Sanitation, Peoria Health Department. He succeeds KARL MASON * who has joined the staff of the Pittsburgh Field Training Service of the U.S.P.H.S.

MARY T. A. POLING, M.D., has succeeded WARREN E. BRADBURY, M.D., as Seneca County (Ohio) health commissioner.

WILLIAM REINER-DEUTSCH, Ph.D.,* has been appointed director of chronic infection research, Department of Bacteriology, New York Eye and Ear Infirmary.

E. S. ROGERS, M.D., M.P.H., dean of the School of Public Health, University of California, Berkeley, is on an extended leave of absence on an assignment in Southeast Asia for the Economic Cooperation Administration having to do with medical education. He is expected to return at the end of May.

WILLIAM A. SAWYER, M.D.,* has retired as medical director of the Eastman Kodak Company, Rochester, N. Y., after 31 years of service and will continue with the Company as medical consultant. He has been succeeded by JAMES H. STERNER, M.D.,* associate medical director.

JAMES P. SLATER,† formerly chief of the division of environmental sanitation, Tulsa, Okla., now holds the same position in the San Diego (Calif.) City and County Health Department.

ROMAINE M. SMITH, R.N.,† who previously was in Europe for six months with the U. S. State Department serving as a consultant on nursing education and public health nursing to the High Commissioner of Germany, has joined the staff of the California State Department of Public Health as a public health nursing consultant.

JAMES G. STONE,* director of program development for the last 8 years, has been appointed executive secretary of the National Tuberculosis Association, succeeding FREDERICK D. HOPKINS † who has retired after 36 years with the association, the last 31 of them as executive secretary. James E. Perkins, M.D.,* is the managing director of the association.

ROBERT SUTHERLAND, M.D., D.P.H., who has been medical adviser and secretary of the Central Council for Health Education, Tavistock House, London, England, and who recently visited the United States, has resigned to accept appointment as senior lecturer in Preventive Medicine and Public Health at the University of Leeds, England.

JANET THOMPSON has been appointed educational director in the Division of Nursing of the Cincinnati (Ohio) Department of Health.

JEAN THURSTON, formerly a public relations executive with Edward Gottlieb & Associates, New York City, has been appointed assistant executive secretary in charge of public relations of the American Nurses' Association. She succeeds ANNIE LAURIE CRAWFORD, R.N., who has accepted a position with the Minnesota Mental Health Commission.

ANTONIO TOMASSI, an Italian sanitary engineer who has been studying and working in the United States, has returned to Italy to accept an appointment as assistant professor of sanitary engineering at the University of Naples.

FRANK A. VORHES, JR., former chief chemist of the division of field operations, has been appointed chief of the Division of Food of the U. S. Food and Drug Administration, succeeding the late Dr. WARD BENJAMIN WHITE.

ROBERT WECHSLER, formerly assistant public relations director of Jewish Family Service, has been appointed to the public relations department of the National Association for Mental Health, New York City.

ANNE L. WHARTON,† formerly supervising nurse, Otero County (Tenn.) Health Department, is now public health instructor in the school of nursing, The Baroness Erlanger Hospital, Chattanooga, Tenn.

COL. WILLIAM L. WILSON, U.S.A., M.C.,* special assistant to the Surgeon General of the U. S. Army for Civil Health Affairs, has been appointed assistant administrator for health and welfare of the Civil Defense Administration.

BERNARD ZERBE, for 9 years managing editor of the American Druggist, has become executive editor of the Practical Pharmacy Edition of the Journal of the American Pharmaceutical Association, Washington, D. C.

The following appointments have been made to the Point Four Program:

FREDERICK F. ALDRIDGE,* director, Division of Sanitation, Seattle Health Department, assigned to Iran as chief sanitary engineer.

WALTER F. EDMUNDSON, II,† dermatologist with the Industrial Hygiene Division of the U. S. Public Health Service, assigned to Mexico as an epidemiologist.

MORTIMER R. LEWIS, irrigation engineer with the U. S. Department of Agriculture, assigned to Lebanon where he will develop the Litani River Valley.

WILLIAM A. MCQUARY,* formerly with the Industrial Hygiene Division, U. S. Public Health Service, goes to Chile as industrial hygiene engineer.

PEARLE G. MORRISON, formerly a staff nurse at Harlem Hospital, New York City, is being sent to Liberia as nursing arts instructor.

EMIL E. PALMQUIST, M.D.,* director of public health, Seattle, Wash., assigned as director of health activities in Iran.

CHARLES B. WADE, marine biologist of Seattle, Wash., goes to Peru to help establish a marine biological research unit and train technicians in marine fishing biology.

RALPH E. WINCHELL, land use and settlement analyst of the U. S. Department of Interior,

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* Fellow.
† Member.

will join Mr. Lewis in Lebanon to work on the Litani River Project.

DOROTHY GRACE YOUNG, public health nurse, District of Columbia, assigned to Liberia as public health nurse.

DEATHS

ELIN ANDERSON,† specialist in Rural Health Services, Agricultural Extension Division, U. S. Department of Agriculture, died on January 4 after a long illness (Public Health Education Section).

ELEANOR DEFOREST BALDWIN, M.D., assistant professor of medicine, College of Physicians and Surgeons, Columbia University, died January 16 after a long illness.

ANDREW CARNEY,† Executive Officer, Westfield (N. J.) Board of Health, died recently (Health Officers Section).

GRACE M. COFFMAN, R.N.,† director of public health nursing, Tacoma (Wash.) City Health Department, died about a year ago (Public Health Nursing Section).

RALPH E. DIFFENDORFER, M.D., first president and the prime mover of The Japan International Christian University Foundation, Inc., died January 31 at the age of 72.

CHARLES T. DOLEZAL, M.D., assistant director of the American Hospital Association, Chicago, Ill., died March 19 at the age of 51.

JOSEPH M. DOWIS, M.D.,† of Grapevine, Tex., died February, 1950 (Epidemiology Section).

CARROLL E. EASTERDAY, M.D., deputy state and county health officer of Frederick County, Md., died suddenly on December 9, 1950, at the age of 42.

FERNANDO FIGUEREDO, M.D.,† of Valencia, Venezuela, S. A., died December 26, 1950 (Unaffiliated).

C. A. GREENLEAF, M.D.,† school health director, Olean and Cattaraugus County, New York, died March 4, 1951.

L. B. HINDMAN,† executive secretary, Lorain County (Ohio) Tuberculosis and Health Association, died about a year ago (Public Health Education Section).

LOGAN H. MCLEAN, executive secretary of the Mississippi Tuberculosis Association since July 1, 1931, died January 2 after a long illness.

J. E. OFFNER, M.D.,† at one time state health commissioner, Charleston, W. Va. (Health Officers Section).

CALVIN G. PAGE, M.D.,* who retired in 1950 as a research bacteriologist specializing in arthritis and tuberculosis, Boston City Health Department, died February 25 at the age of 83. He was a Life Member of the A.P.H.A. (Laboratory Section).

IRVING J. SESKIS, president of Schenley Laboratories, Inc., died at Ochsner Clinic in New Orleans, La., on March 5 at the age of 52.

CONFERENCES AND DATES

American Public Health Association. Headquarters, Civic Auditorium, San Francisco, Calif., Oct. 29–Nov. 2.

Coming in May, June, and July:

American Association of Medical Social Workers. Annual Meeting. Atlantic City, N. J. May 17.

American Association of Social Workers. Hotel Chelsea, Atlantic City, N. J. May 11–13.

American National Red Cross. Annual Convention. New York, N. Y. June 25–27.

American Society of Medical Technologists. New Ocean House, Swampscott, Mass. June 24–28.

American Water Works Association:
- Canadian Section. Royal Alexander Hotel, Winnipeg, Man. May 21–23.
- New Jersey Section Summer Meeting. Trenton, N. J. June 29.
- Pacific Northwest Section. Vancouver, B. C. May 17–19.

Arizona Public Health Association. Mesa. May 17–18.

Canadian Public Health Association. Montreal. May 28–31.

Central Atlantic States Association of Food and Drug Officials and Association of Food and Drug Officials of the United States. Hotel Adelphia, Philadelphia, Pa. May 21–25.

Colorado Public Health Association. Crags Hotel, Estes Park, Colo. June 7–8.

Georgia Public Health Association. Hotel DeSoto, Savannah. May 7–9.

Idaho Public Health Association. Hotel Bannuck, Pocatello. May 28–29.

International Congress of Gynecology. Paris, France. June 23–29.

Iowa Public Health Association. Hotel Ft. Des Moines, Des Moines, Iowa. May 10–11.

International Hospital Federation. Brussels, Belgium. July 15–21.

Massachusetts Public Health Association and New England Health Institute. Massachusetts State University, Amherst. June 13–15.

Missouri Public Health Association. Governor Hotel, Jefferson City. May 7–9.

National Conference of Social Work. Atlantic City, N. J. May 13–18.

National League of Nursing Education. Boston, Mass. May 7–11.

National Tuberculosis Association. Annual Meeting. Cincinnati, Ohio. May 14–18.

New England Health Institute and Massachusetts Public Health Association. Amherst, Mass. June 13–15.

New Mexico Public Health Association. Hotel Alvarado, Albuquerque. May 21–23.

New York State Health Conference. Lake Placid. June 4–7.

Ohio Public Health Association. Southern Hotel, Columbus. May 10–11.

Oregon Public Health Association. Medford. May 28–29.

South Carolina Public Health Association. Ocean Forest Hotel, Myrtle Meach. May 21–23.

Western Branch with A.P.H.A. Civic Auditorium. San Francisco, Calif. Oct. 29–Nov. 2.

West Virginia Public Health Association. Pritchard Hotel, Huntington. May 10–12.

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